# NORTH DAKOTA STATE RAIL PLAN UPDATE 2006

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# EXECUTIVE SUMMARY

This document is the first update of the North Dakota State Rail Plan that was published in 1998. It provides information and guidance for state and local officials, rail users and others affected by railroad transportation, and to serves as a guide for state investments in eligible rail lines and related projects.

In this revision the basic plan has been reorganized and shortened, with supporting information moved to appendices. In addition, the 1998 rail plan had a section that dealt with regulatory issues. That has been removed, because regulatory issues are not within the purview of ***NDDOT*** and are not within the scope of the rail plan.

The rail plan is organized into the following chapters, with appendices:

Chapter 1 – ND Rail Planning Guidance
Chapter 2 – The North Dakota Rail System
Chapter 3 – ND Rail Assistance and Safety Programs and Guidelines

The state rail plan supports *TransAction*, North Dakota's strategic transportation plan. *TransAction*'s mission, vision and goals are stated below.

**Transportation Mission**

"*North Dakota will provide a transportation system that offers personal choices, enhances business opportunities and promotes the wise use of all resources."*

**Transportation Vision**

*"North Dakota's transportation system is an important part of regional, national and global systems, developed strategically to help grow and diversify the economy and enhance our quality of life."*

**Transportation Goals**

*Safe and secure transportation for residents, visitors, and freight.*
*A transportation system that allows optimum personal mobility.*
*A transportation system that allows the efficient and effective movement of freight.*
*A transportation system that enhances economic diversity, growth, and competitiveness.*
*Funding sufficient to protect North Dakota's transportation investment and address future transportation needs.*

*TransAction* also articulates 16 Initiatives and Strategies for all transportation modes. The rail plan relates most specifically to Initiatives 1, 3, 4, 7, 10, 12, 14, and 15.

**Administrative Note**
Terms included in the Glossary are bolded and italicized with first use in the document.

# Rail Plan Update Overview

## Chapter 1 – Introduction, Purpose, Scope and Use, and Goals and Strategies

Chapter 1 provides guidance for rail planning in ND. It contains the rail plan's purpose, scope and use and planning goals and strategies. It also identifies trends that have potential to affect the ND rail transportation system.

A Rail Advisory Group, which reflected a cross-section of railroad, shipper, and public organizations, was tasked with developing a vision and implementation strategies for rail transportation in North Dakota. The group met four times, with one meeting being a joint North Dakota – Minnesota planning and coordination session. Detailed information from these meetings is in Appendix D.

## Chapter 2 – The North Dakota Rail System

Chapter 2 provides an overview of the state railroad system and related information. There is a brief history of North Dakota railroads followed by summary profiles of the seven freight railroads operating in the state. Rail crossing characteristics are presented, as are characteristics of shipper facilities with an overview of ***shuttle loader*** facilities and a map of their locations. Included is an overview of passenger rail service and traffic levels. Commodity and freight flows are addressed. Chapter 2 also provides an overview of the abandonment process.

## Chapter 3 – North Dakota Rail Freight Assistance Programs and Guidelines and Crossing Safety Programs

Chapter 3 provides a description of the North Dakota rail assistance revolving loan funds and the state's railroad–highway ***grade crossing*** safety efforts.

**Rail Assistance**
North Dakota has two revolving loan funds for freight rail assistance; ***Local Rail Freight Assistance (LRFA)*** *and* ***Freight Rail Improvement Program (FRIP)***. ***LRFA*** was initially funded with a federal grant and the funds retain their federal identity. Federal Railroad Administration (FRA) approval is required for LRFA projects. FRIP loan funds are state funds and there is no requirement for federal involvement in their use. LRFA and FRIP are presently the only state railroad assistance programs available for rail line construction and rehabilitation projects.

**Crossing Safety**
The federal railroad-highway grade crossing safety program began in 1973, when Congress authorized expenditure of funds from the Highway Trust Fund for crossings improvements on the Federal-aid highway system. In 1976, Congress provided funding for all public crossings and has renewed the grade crossing safety program in all subsequent surface transportation acts.

North Dakota's highway – rail crossing program began in 1978 and complements the federal program. The funds are use for signal installation and upgrade, other safety upgrades and crossing closures.

**Operation Lifesaver**

In 1991, Congress directed the Secretary of Transportation to set aside $300,000 each fiscal year to support a public information and education program to help prevent and reduce motor vehicle accidents, injuries, and fatalities and to improve driver behavior at railroad–highway crossings. The money has been used to support Operation Lifesaver. NDDOT continues to work with Operation Lifesaver and other safety groups to promote an awareness of grade crossing hazards and driver responsibility.

**Quiet zones**

The state is aware that train horns create noise impacts on communities and encourages continued research into ways to mitigate noise impacts without compromising safety. FRA has established certain criteria for ***quiet zones***, where trains horns are not sounded. Fargo, in cooperation with Moorhead, MN, is in the process of implementing a quiet zone along the BNSF mainline that runs through both communities. Other North Dakota communities have expressed interest in quiet zones. NDDOT affirms that quiet zones are a local issue and decisions regarding them should be made at that level.

# CHAPTER 1

# ND RAIL PLANNING GUIDANCE

This chapter contains the Rail Plan's purpose, scope and use; planning goals with implementation strategies and action items; and trends that have potential to impact rail transportation.

## PURPOSE, SCOPE AND USE

### Purpose

- Develop a shared vision for North Dakota's rail system.
- Provide broad strategic direction for collaborative rail system enhancement efforts.
- Develop and maintain an inclusive and ongoing strategic rail planning process.
- Communicate information regarding the existence and availability of rail assistance programs

### Scope

The rail plan scope is broad. It engages public and private sector providers and users, all levels of government, and multiple modes of transportation. It identifies trends and immediate and long term strategic rail transportation issues. It is a living document that considers both short and long-term needs.

The rail plan examines strategic rail transportation roles and responsibilities across all levels of government and the private sector. It recognizes and respects the functions of the private sector and the prerogative of local governmental units and tribal governments to develop their own rail transportation plans and projects.

The rail plan also explores and identifies opportunities for public-private partnerships and collaborative efforts by identifying strategic goals and strategies.

### Use

- Promote cooperation and collaboration between jurisdictions and between the public and private sectors.
- Improve communication between the public and private sectors and between railroads and rail system users.
- Promote understanding of the strategic importance of rail transportation in North Dakota.
- Enable North Dakota to achieve its shared rail transportation vision.

# GOALS AND STRATEGIES

A Rail Advisory Group was formed to provide input to the rail plan update process and to establish a vision for North Dakota's rail system. The Advisory Group consisted of various stakeholders in the North Dakota rail industry. The Group held four meetings, including a joint meeting with Minnesota to consider cross border issues and issues common to both states.

The Rail Advisory Group was asked to identify a vision for North Dakota's rail system. The responses were combined into eleven distinct vision statements. From these primary vision statements, specific categories within each vision were identified. Action items, or strategies, were then developed. The strategies were further refined to ensure that the proposed actions were within the scope of the rail plan.

The Advisory Group's vision statements and strategies were distilled into four planning goals with supporting strategies and action items. These goals, strategies and action items are the fundamental planning guidance for ND rail transportation. They are listed below. Detailed information from the Advisory Group sessions, including the vision statements and strategies discussed at the meetings, is in Appendix D.

## 1. A safe and secure railroad system (TransAction Initiative 14).

1. *Support efforts to improve rail safety and security.*
    - Broaden Operation Lifesaver target audience.
    - Review best rail safety and security practices and determine applicability in North Dakota.
    - Maintain a current rail crossing inventory.
    - Continue to provide incentives to close selected public rail crossings.
    - Support enforcement of rail crossing laws.
    - Review NDDOT rail crossing signal program.
    - Support federal, state and local incentives to regional and local railroads for implementing federal mandates.

2. *Initiate discussion to identify and prioritize rail safety and security issues.*
    - Encourage local governments to include rail crossing issues in the planning process.
    - Seek private industry input on rail crossing issues.
    - Review ND law regarding railroad safety and security to identify potential revisions, deletions or additions.
    - Broaden the perspective of safety and security to include freight in addition to vehicle, infrastructure and personal security issues.

## 2. A rail system (integrated with other transportation modes) that is capable of meeting current and future service needs (TransAction Initiatives 1,2,4,12,16).

1. *Initiate dialog with railroads, private industry and local governments to determine current and future rail service needs in the state.*
    - NDDOT should initiate discussion with railroads to improve strategic planning for use of resources such as rail loan funds.
    - Survey industry to determine service and capacity needs for the future.
    - Evaluate ND rail system accessibility.
    - Identify areas that would benefit from increased access.
    - Identify criteria to develop a means of measuring levels of freight and passenger service.
    - Encourage annual meetings between railroads and rail use stakeholders to discuss issues, needs and solutions.

2. *Identify what is needed to achieve an integrated rail network.*
    - Identify problems with transition between ***Class I*** and ***Regional/Local railroads.***
    - Identify bottlenecks, pinch-points and other deficiencies on the rail system.
    - Develop a formal mechanism for information exchange to determine adequate service levels between Class I and Regional/Local railroads.
    - Consider the effect that rail infrastructure projects will have on the overall transportation network of the state.

3. *Provide assistance to improve infrastructure and enhance system capacity and efficiency.*
    - Solicit public comment for rail infrastructure projects.
    - Develop/refine procedures and selection criteria for rail loan fund projects.
    - Emphasize network improvement as a criterion for allocation of state rail assistance funds.
    - Support an economically viable railroad system that is profitable and allows for reinvestment in rail equipment and infrastructure.
    - Support a favorable business and regulatory climate for investment and business development.
    - Support public–private partnerships that promote business development and economic growth.
    - Identify and track legislation that may have impact on rail policies, infrastructure or operations.

## 3. Railroad operations that enhance mobility and quality of life (TransAction Initiatives 3,15).

1. *Initiate an ongoing dialog between railroads, governmental entities and rail stakeholders to mitigate negative impacts of railroad operations and activities.*
2. *Encourage local governments to solicit participation by railroads in planning and zoning activities.*
3. *Assess opportunities for use of abandoned rail line right-of-way.*

## 4. A coordinated inter/multimodal facilities network that provides access to national and international markets (TransAction Initiative 7).

1. *Facilitate discussion between governmental entities, business owners, shippers and transportation providers to identify and ensure adequate transportation access to inter/multimodal facilities.*
    - Implement ND rail freight strategy for ***intermodal*** and transload facilities.
    - Serve as an information source regarding rail access for proposed inter/multimodal facilities.
    - Support public–private partnerships that enhance development of an inter/multimodal network.

# TRENDS

Trends can be significant, forcing us to take new directions. Some trends present opportunity; others present challenges. To make effective transportation decisions, we need to monitor the implications of trends. It is also important to remember that some trends can be changed or reversed.

The following trends appear to have important implications for rail transportation.

## Continuing Long–Term Trends

- Our farmers have always grown and shipped large volumes of bulk agricultural commodities.
- Railroads have always been the main mode of transportation for grain and oilseeds leaving the state.
- Production agriculture is a primary component of our economy.
- For many years, federal regulations and environmental issues have significantly impacted transportation.
- Over the long term, energy costs have risen, accompanied at times by intermittent supply disruptions and price instability.

## Emerging Trends

- Global terrorism threatens national security, international relations and world-wide petroleum production, distribution and market stability.
- Overall, emphasis on transportation safety and security activity, including a strong antiterrorism component will increase.
- Agriculture is becoming more specialized (growers are producing organic, non-genetically modified organisms, identity preserved grains and meat products, etc.)
- Livestock feeding operations are moving from the Corn Belt to the Great Plains. This, coupled with increasing demand for ethanol and bio-diesel, has potential to impact movement of agricultural commodities, particularly corn and oilseeds.
- Growth will continue in the areas of e-commerce, just-in-time delivery, product and food safety, security concerns, and intermodal container movements.

# CHAPTER 2

# THE NORTH DAKOTA RAIL SYSTEM

## BRIEF HISTORY[1]

Development of the North Dakota rail system was influenced primarily by the Northern Pacific Railway (NP); the St. Paul, Minneapolis and Manitoba Railway – the Manitoba – and its successor, Great Northern Railway; and the Minneapolis, St. Paul and Sault St. Marie Railway (the Soo Line). They are briefly described below.

Northern Pacific Railway was chartered by Congress in 1864 and given a 50 million acre land grant to construct a railroad from Duluth to the Puget Sound. NP founded the city of Fargo in 1871 and brought rail service to North Dakota June 6, 1872, when construction of a bridge across the Red River linking Fargo and Moorhead, MN, was completed. NP continued building its rail line west across the state, crossing the Montana border just west of Beach.

The Manitoba, which was formed in 1879 with James J. Hill (the Empire Builder) as its general manager, reached Fargo in 1880. A line from Fargo to Grand Forks was completed in 1881, and construction continued toward the Canadian border. The Manitoba also built a line west from Grand Forks, reaching Devils Lake in 1883 and Minot in 1886. Construction continued west and the line crossed the Montana border near Williston in 1887. Several branch lines, known as the "Finger Lines" were built along the Grand Forks–Montana route, primarily to move grain. The Manitoba became the Great Northern Railway Company in September of 1889.

The Soo Line[2] was formed in 1888 with the consolidation of the Minneapolis, Sault Ste. Marie & Atlantic Railway, the Minneapolis & Pacific Railway, the Minneapolis & St. Croix Railway and the Aberdeen, Bismarck & North Western Railway. In 1893, the Soo Line completed a diagonal route across North Dakota, from Fairmount to Portal, where it interchanged with the Canadian Pacific Railway (CPR). CPR was by then a transcontinental railroad, having completed construction of a line across Canada in November of 1885. The Soo Line next built a branch line network south and east of Bismarck, connecting to Fairmount via Oakes. Finally, between 1905

[1] The main sources for this section are: (1) Thoms, William E. and R. J. Tosterud. *West of the Red—The Role of Transportation in the Development of North Dakota*, UGPTI, Reprinted, 1996; (2) Robinson, Elwyn B. *History of North Dakota*, University of Nebraska Press, 1963; and (3) various newspaper articles and railroad press releases.

[2] The Soo Line Railroad later became part of Canadian Pacific Railway. In describing historical events in the rail plan, the name of the railroad company at the time of the event is used unless the current or successor railroad company also was involved in the event or transaction.

and 1912, the "Wheat Lines," which run across much of northern North Dakota, were constructed. The Soo Line became a subsidiary of the Canadian Pacific Railway when CPR participated in its financial restructuring in the late 1940s. After the restructuring, CPR held 56% of Soo Line common stock. CPR purchased 100 percent of Soo Line stock in 1990, making it a wholly owned subsidiary.

Several other railroad companies have owned or operated track in North Dakota. They include the Milwaukee Road, Chicago & Northwestern, Dakota, Minnesota & Eastern and the Midland-Continental. Of these, only the Dakota, Minnesota & Eastern still exists as an operating railroad, but it no longer owns or operates track in ND.

The number of miles of railroad in North Dakota peaked in 1936 at more than 5,200. Since then, 1,649 miles have been abandoned, reducing the network to the approximately 3,600 miles it is today (Appendix B). Miles of road is a primary indicator of system coverage.[3]

## NORTH DAKOTA'S RAILROAD SYSTEM TODAY

Today in North Dakota there are seven railroad companies operating 3,609 miles of road. Two are Class I carriers, three are regional railroads and two are local railroads. ***The Surface Transportation Board*** classifies railroads as ***Class I, II, or III*** on the basis of annual revenue.[4] Miles of road is not considered in ***STB*** classification. The ***American Association of Railroads (AAR)*** has a classification system that considers both annual revenue and miles of road. The seven railroads, with classification, are named below.

BNSF and CPR are Class I railroads by STB classification standards. The Dakota, Missouri Valley & Western Railroad (DMVW), the Northern Plains Railroad (NPR), and the Red River Valley & Western Railroad (RRVW) do not meet the Class I revenue threshold. They are defined as regional railroads by AAR classification standards because they operate more than 350 miles of road. The Yellowstone Valley Railroad (YSVR) and Dakota Northern Railroad (DNRR) are both local railroads because they fall below the AAR regional railroad criteria.[5]
Table 1 lists the miles of main line and branch line track in North Dakota by operating railroad. BNSF miles of road are about 62% ***main line***, while CPR has about 79% main line. The Class I carriers operate 62% of the total track mileage in North Dakota.

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[3] Miles of road excludes side tracks, crossovers and yard tracks. The term is synonymous with *route miles*.

[4] Class I: =>$250 million adjusted annual operating revenue for three consecutive years
Class II: $20 million - $249,999,999.99
Class III: <$20 million

[5] A regional railroad is defined by the Association of American Railroads as a company that operates 350 miles of railroad and/or earns $40 million in annual revenues. Mileage is based on total system miles, which may include track in more than one state. A local railroad falls below the regional railroad criterion.

**Table 1.** North Dakota Railroad System Mileage – 2005 - Source: North Dakota Public Service Commission, December 2005, and website information

| Railroad | Main line | Branch Line | Total Miles |
|---|---|---|---|
| BNSF Railway | 1,107 | 683 | **1,790** |
| Canadian Pacific Railway | 353 | 92 | **445** |
| Red River Valley & Western Railroad | - | 428 | **428** |
| Northern Plains Railroad | - | 436 | **436** |
| Dakota, Missouri Valley & Western Railroad | - | 431 | **431** |
| Yellowstone Valley Railroad | - | 9 | **9** |
| Dakota Northern Railroad | - | 70 | **70** |
| **TOTAL** | **1,460** | **2,149** | **3,609** |

Table 2 summarizes the overall system characteristics of the two Class I railroads. BNSF operates more than 32,000 route miles. CPR operates nearly 14,000 miles. Both carriers operate in the United States and Canada. BNSF's North Dakota lines comprise 6.1% of BNSF's system miles, while the CPR's North Dakota lines comprise 3.4% of the CPR's system miles.

**Table 2.** Select System Statistics for BNSF and CPR – 2003

| Plant and Equipment | BNSF | CPR System |
|---|---|---|
| Miles of road operated | 32,150 | 13,848 |
| Miles of road owned | 24,674 | 9,550 |
| Freight cars in service | 99,815 | 47,600 |
| Locomotives in service | 5,675 | 1,622 |

Source: American Association of Railroads, 2003 and railroad website information.

Commodity movement information by railroad is presented in the carrier profiles that follow. More information is contained in Appendix A.

# CARRIER PROFILES – CLASS I RAILROADS

## BNSF Railway[6]

The BNSF Railway system is the result of a series of mergers and acquisitions. In 1970, the Great Northern, the Northern Pacific, and the Chicago, Burlington & Quincy merged to form the Burlington Northern railroad. In 1980, the Burlington Northern merged with the St. Louis & San Francisco railroad (the "Frisco" line). In September of 1995, the merger of Burlington Northern Inc., parent company of Burlington Northern Railroad, and Santa Fe Pacific Corporation, parent company of the Atchison, Topeka and Santa Fe Railway, created the Burlington Northern Santa Fe Railroad Company. The Burlington Northern Santa Fe Railroad Company became BNSF Railway in 2005. Detail for BNSF operation in ND is presented in Appendix C.

BNSF Railway currently operates 32,150 route miles in 28 states and two Canadian provinces. Its network covers the western two-thirds of the United States, stretching from major west coast ports in the Pacific Northwest and southern California to the Midwest, Southeast and Southwest, and from the Gulf of Mexico to Canada. BNSF operates 1,107 miles of main line and 683 miles of branch line in North Dakota, for a total of 1,790 miles of road in the state.

Figure 1 illustrates BNSF's North Dakota commodity mix using the two-digit Standard Transportation Commodity Code or STCC. The chart is based on BNSF's 2005 report to the North Dakota Public Service Commission (NDPSC), which reflects 2004 traffic data. As the chart shows, coal shipments comprise nearly 45% of the carloads handled by BNSF in North Dakota. Other major commodities transported by the BNSF include: farm products (25%), food and kindred products (11%), nonmetallic minerals (5%) and chemicals and allied products (4%). The *Other* category shown in Figure 1 includes waste and scrap materials and petroleum and coal products, as well as other miscellaneous traffic. Appendix A provides more traffic details, listing the carloads and tons originated and terminated for principal Standard Transportation Commodity Codes.

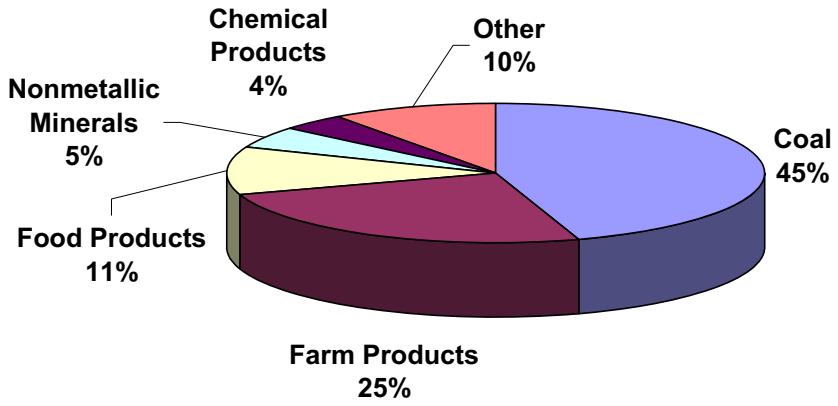



**Figure 1.** Principal Commodities Handled by BNSF in North Dakota in 2004 – Source: Annual Report to NDPSC.

[6] Sources for the BNSF profile: Annual Report to the North Dakota Public Service Commission, Annual Report to Stockholders, and press releases by BNSF officials.

## Canadian Pacific Railway (CPR)[7]

The CPR is the seventh largest rail system in North America. Based in Calgary, Alberta, it is a wholly-owned subsidiary of Canadian Pacific Limited which also is the owner or has majority interests in Pan Canadian Petroleum, CP Hotels, and Fording Inc.

The CPR combined railway network extends from St. John, Newfoundland, to Vancouver, British Columbia in Canada, throughout the U.S. Midwest and Northeast, and as far south as Louisville, KY. CPR has direct connections with all Class I railroads in the United States and Canada. It also has connections to many US and Canadian regional and local railroads.

The CPR markets its services throughout North America under the Canadian Pacific Railway name, but there are four different railroads that handle the company's business. They are: CPR, St. Lawrence & Hudson Railway, Delaware & Hudson Railway and Soo Line Railroad Company. Soo Line handles business for CPR in North Dakota. Detail for CPR operation in ND is presented in Appendix C.

As Figure 2 shows, farm products shipments comprise 65% of the carloads handled by CPR in North Dakota. Other major commodities transported by the CPR include: food products (19%), chemicals and allied products (8%), waste and scrap (4%) and stone, glass and clay (3%). Appendix A provides more traffic details, listing the carloads and tons originated and terminated for principal Standard Transportation Commodity Codes.

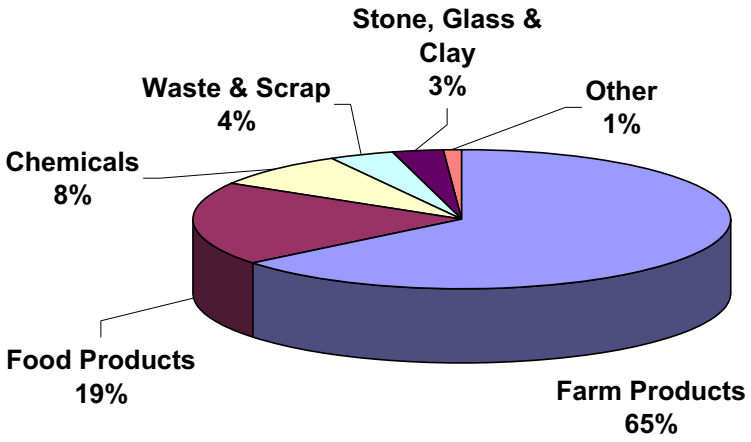



**Figure 2.** Principal Commodities Handled by CPR in North Dakota in 2004 – Source: Annual Report to NDPSC.

[7] Sources for the CPR profile: Annual Report to NDPSC, Annual Report to Stockholders, Company Profile and various press releases as posted at CPR's Internet site.

## CARRIER PROFILES – REGIONAL RAILROADS

### Dakota, Missouri Valley & Western (DVMW)[8]

DMVW began operation September, 1990, on track and trackage rights leased from CPR. The railroad is headquartered in Bismarck and currently operates 431 miles of rail line in North Dakota, along with limited operations in Montana and South Dakota. The railroad interchanges with CPR at the North Dakota cities of Flaxton, Max, and Hankinson. DMVW system detail is presented in Appendix C.

DMVW handles about 22,000 annual carloads, including ***bridge traffic***. As shown in Figure 3, farm products comprise approximately 72% of the railroad's traffic base in North Dakota, with miscellaneous shipments comprising the largest share. Peas, fly ash, lime, and ballast are the largest contributors to the miscellaneous category. Wheat, corn, soybeans, and durum comprise 68% of DMVW total carloads. The remainder is minor crops and fertilizer. More traffic details are presented in Appendix A.

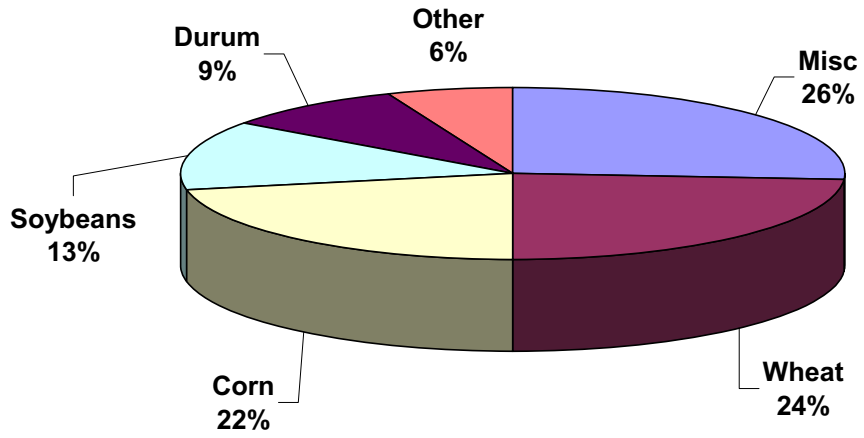



**Figure 3.** Principal Commodities Handled by DMVW in North Dakota in 2004 – Source Report to the NDPSC

[8]The primary sources of the DMVW profile are a company profile provided by railroad officers and the railroad's annual report to NDSPC.

## Northern Plains Railroad (NPR)[9]

NPR began operation January of 1997 over 383 miles of leased from CPR. NPR is headquartered in Fordville and currently operates 436 miles of track in ND. NPR also operates track in Minnesota from Oslo to Thief River Falls. NPR interchanges with CPR at Kenmare, ND, and Thief River Falls, MN. NPR system detail is presented in Appendix C.

NPR handles about 16,000 annual carloads, including bridge traffic. As shown in Figure 4, farm products comprise approximately 93% of the railroad's traffic base in North Dakota. Wheat shipments comprise 63% of NPR's carloads in North Dakota. Barley is the next highest at 21%. Durum, soybeans, aggregate, fertilizer, and sunflower shipments provide the remaining carloads. More traffic details are presented in Appendix A.

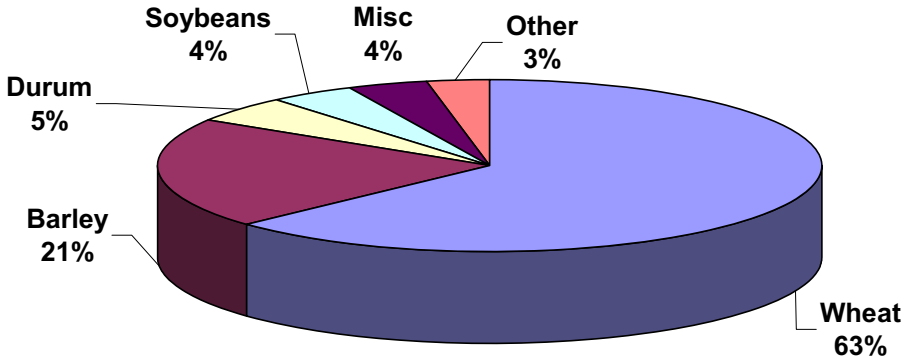



**Figure 4.** Principal Commodities Handled by NPR in North Dakota in 2004 – Source Report to the NDPSC

[9]The NPR profile was compiled from newspaper articles and CPR press releases.

## Red River Valley & Western Railroad (RRVW)[10]

RRVW began operations July 19, 1987, over track acquired from BNSF Railway (then Burlington Northern Railroad). RRVW is headquartered in Wahpeton and owns and operates 428 miles of track in North Dakota with additional operations in Minnesota. RRVW interchanges with BNSF at Breckenridge, MN. RRVW system detail is presented in Appendix C.

In 2004, RRVW handled more than 35,000 carloads in North Dakota. Farm products shipments comprise 58% of the railroad's traffic base, but the base is more diversified than that of the other regional carriers. Corn, wheat, corn syrup, sugar and soybeans account for a combined total of 65% of traffic. Figure 5 illustrates overall traffic percentages. More traffic details are shown in Appendix A.

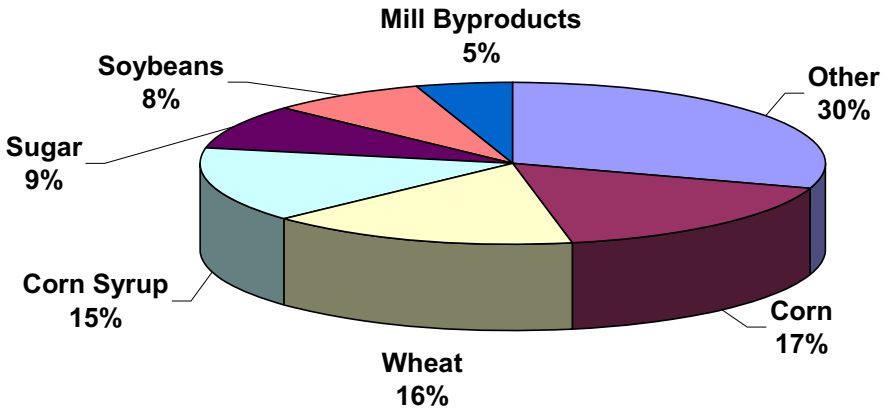



**Figure 5.** Principal Commodities Handled by RRVW in North Dakota in 2004 – Source Report to the NDPSC

[10]The primary sources of the RRVW profile are a company profile provided by railroad officers and the railroad's annual report to the NDSPC.

## CARRIER PROFILES – LOCAL RAILROADS

### Dakota Northern Railroad (DNRR)[11]

DNRR began operation February 5, 2006, on 70 miles of branch line leased from BNSF. The railroad is headquartered in Crookston, MN and is owned by KBN Group, Inc., a Minnesota corporation. DNRR operates 70 miles of track in North Dakota and interchanges with BNSF at Grafton. DNRR system detail is presented in Appendix C.

Since DNRR is a new operation, there is no movement history. The railroad expects to move about 3,500 cars/year mostly ethanol from Walhalla.

### Yellowstone Valley Railroad (YSVR)[12]

YSVR began operation August 15, 2005, over track leased from BNSF. YSVR is one of 17 short line railroads owned by Watco Companies Inc., a Kansas corporation. YSVR is headquartered at Sidney, MT. Its network is entirely in Montana, except for where the Glendive line crosses into North Dakota near Fairview and runs north for 8.7 miles before crossing back into Montana. YSVR interchanges with BNSF in Montana, at Glendive and Snowdon. YSVR system detail is presented in Appendix C.

Because YSVR is a new operation, there is no movement history. According to a joint YSVR/BNSF press release, YSVR will serve 12 customers and is expected to move more than 8,000 carloads in 2005.

[11] The primary sources for the DNRR profile are the BNSF web site and the Surface Transportation Board
[12] The primary source for the YSVR profile is the company web site

# RAILROAD NETWORK CHARACTERISTICS

## Track Condition and Quality Indicators

Several aspects of the railroad network are important to rail planning, but track speed limits and maximum car weights in particular impact efficiency of line operations. Collectively, they indicate where railroads have concentrated investments and where investments may be necessary for continued integration of branch lines and main lines.

The ***track class*** of a line is a proxy for track condition and train operating costs. Operations over Class 1 or excepted track are restricted to 10 mph, while operations over Class 2 track are restricted to 25 mph. Regional railroads view speed restrictions differently than Class I carriers. Because of flexible work rules and lower overhead costs, regional railroads feel less economic pressure to operate at higher speeds. However, slower train speeds on long branch lines with Class 1 track may cause crew related labor cost to be higher than normal for those lines.

The gross weight limit of a line is another indicator of track quality. It is also provides an indication of the ability of a segment to interchange traffic with other segments. In the 1970s, much of the branch line network was restricted to gross car weights of 220,000 pounds, which allowed net loads of 70 to 80 tons. However, the need for effective use of 100-ton hopper cars resulted in branch line capacity limits being raised to 263,000 pounds. Today, the main line track of Class I railroads supports 286,000 pound cars, which permits cargo loads of 110 to 115 tons, depending on the commodity density and the ***tare weight*** of the rail car. There are some railroads operating 315,000-pound cars in designated main line corridors. The 315-kip cars permit net loads of 125 tons.[13]

Larger capacity rail cars are more efficient for railroads because a higher net to tare weight ratio generally means more railroad revenue per car without increasing the cost per bushel for the shipper. But higher carload rates for higher capacity cars may have economic consequences for shippers beyond the rate itself. With a carload rate structure, shippers pay for the total capacity of the car regardless of whether they fully use it. For example, at $4,000 per carload, a shipper who loads 111 tons on the car pays $36 per ton. A shipper who loads the same car with 100 tons pays $40 per ton.

[13] A kip is a *kilo-pound* or 1,000 pounds.

Figure 6 shows the average gross weight limit for each railroad in tons. The values reflect the controlling limit for each segment, weighted by the segment length. As the chart shows, all of the DMVW system is mostly limited to 134-ton cars or 100 tons of cargo, with a few exceptions. Much of RRVW's system is subject to similar limits. However, NPR's system is unrestricted, even though much of it consists of light weight rail. This anomaly may reflect the substantial amount of tie and ballast work done on the Wheat Lines between 1983 and 1997, when approximately $11 million of rail assistance funds were invested. It should be noted that track weight limits are set by the railroads and are subject to change. Weight limits are a compromise based on economics and engineering judgment.

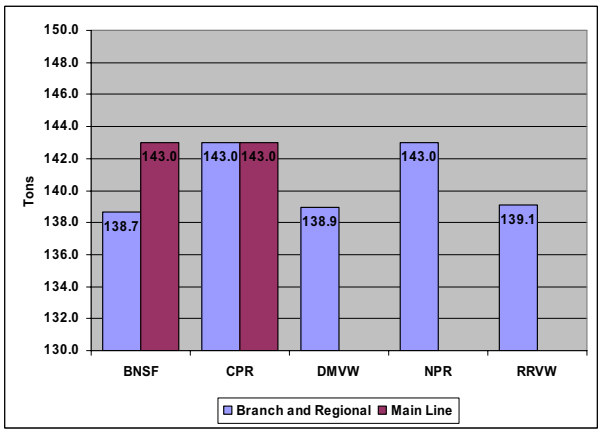



**Figure 6.** Average Gross Weight Limit, Weighted by Segment Length. Sources: 2002 Railroad Timetables or Most Current Available Data

Figure 7 shows the average train speed limit for each carrier's system. The underlying individual values reflect the controlling speed for each segment, weighted by the segment length. As the chart shows, all of DMVW's system is restricted to 10 mph, with exceptions under special orders. The average train speed limit on NPR is 15.3 mph; while on RRVW it is 25 mph. Both NPR and RRVW systems have both Class 1 and Class 2 track, but RRVW is mostly Class 2. As Figure 7 shows, average speed limits are higher for the Class I railroads; 45.5 mph and 43.5 mph for CPR and BNSF, respectively.

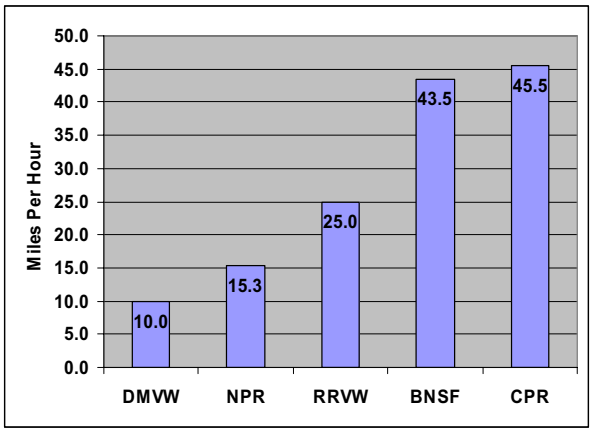



**Figure 7**. Average Train Speed Limit, by Railroad – Weighted by Segment Length

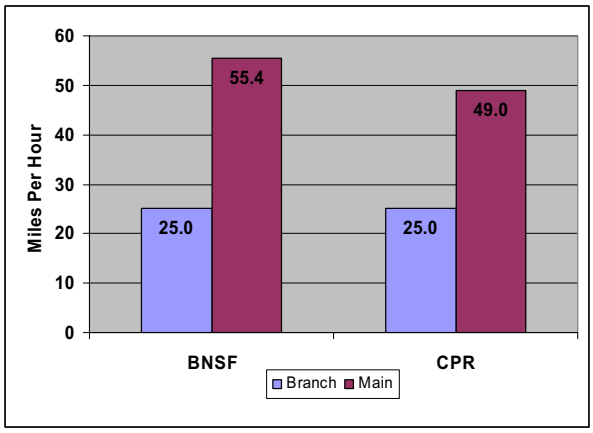



**Figure 8.** Average Class 1 Branch Line and Main line Controlling Speeds, Weighted by Line Length. Sources: 2002 Railroad Timetables or Most Current Available Data

As Figure 8 shows, considerable differences exist between branch line and main line speed limits. The controlling train speed on CPR branch lines is 22 mph, as opposed to 49 mph on main lines. A similar difference in maximum speed exists on the BNSF system, where main line speeds are 30 mph greater than branch line average speeds.

## RAIL GRADE CROSSING CHARACTERISTICS

The Federal Railroad Administration (FRA) Office of Safety Analysis reported 15 highway-rail incidents in North Dakota in 2004. This is down from 23 incidents each year in 2002 and 2003 and 25 incidents in 2001. On average, only two incidents per year occur at private crossings. In 2004, six of the incidents involved automobiles, four involved pickup trucks, and five involved trucks or truck-trailers.

Roads with public at grade crossings have warning signs to alert motorists that they are approaching a rail crossing. The crossings themselves have warning devices to alert motorists to watch for approaching trains. The devices may be either passive or active. Passive devices typically include crossbucks and signs. Active devices typically include automated flashing lights and crossing gates. Figures 9 and 10 show the percentage of crossings with passive and active devices nationwide, grouped by ***AADT***. More than 50% of crossings with passive devices have AADT of less than 30. More than 90% of crossings with active devices have AADT of more than 100. In 2004, 90% of public grade crossings had passive warning devices. In North Dakota, state and federal highway main line grade crossings with AADT of 100 or more have active warning devices.

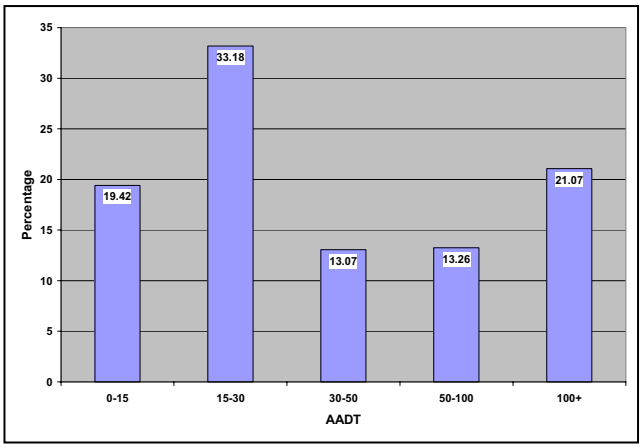



**Figure 9.** Percentage of Public Grade Crossings with Passive Warning Devices
Sources: Grade Crossing Inventory 2004

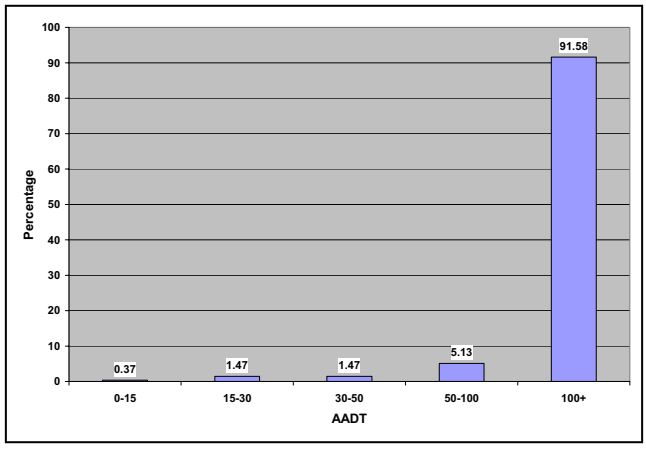



**Figure 10.** Percentage of Public Grade Crossings with Active Warning Devices
Sources: Grade Crossing Inventory **2004**

# CHARACTERISTICS OF SHIPPER FACILITIES

## Storage Capacity

Farm product shipments comprise approximately 64% of the railroad traffic originating in North Dakota. Therefore, the organization and characteristics of grain elevators are of particular importance to the rail plan. There is discussion in Chapter 2 about whether North Dakota elevators are strategically organized and possess the plant configurations to take full advantage of trends in railroad transportation, such as ***shuttle train*** rates.

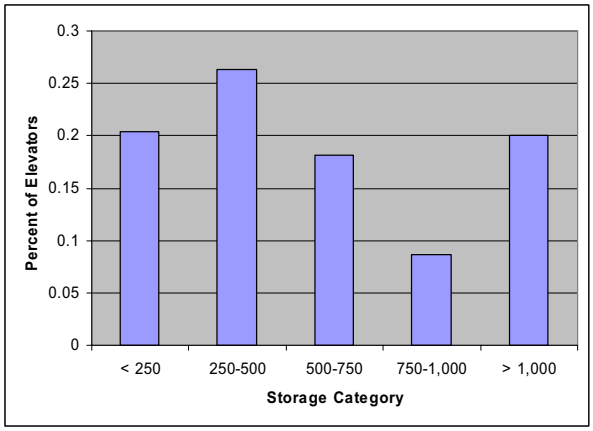



**Figure 11.** Percentage of BNSF Elevators by Storage Capacity Classification – Source BNSF 2004 Grain Elevator Directory

In the 1990s BNSF introduced shuttle train rates for northern grain movements. To obtain these rates, shippers typically had to be able to load 110 or more 111-ton covered hopper cars within 15 hours. Such a requirement makes on-site storage capacity a significant issue. As a point of reference, a 110-car train of 111-ton covered hopper cars would require about 400,000 bushels of wheat. Under the strict time limits imposed, 800,000 bushels may be the minimum storage capacity necessary for an elevator to function effectively in the shuttle train program.[14] However, only 29% of the 206 grain elevators located on the BNSF system in North Dakota currently possess 750,000 bushels or more of storage capacity.[15] Approximately 46% of elevators on the BNSF system in North Dakota have less than 500,000 bushels of available capacity. These facilities might find it difficult to consistently load three 110-car trains a month. Finally, 20 percent of elevators have less than 250,000 bushel capacity. Such an elevator could fill only about 69 cars even if it unloaded its entire storage capacity at one time.

[14]This minimal capacity value is approximately equal to two 110-car shuttle trains. There are several rationales underlying this estimate. First, an elevator would probably need some of its storage for specialty commodities, blending, or other functions. Thus, the full capacity of an elevator may not be available for loading a given shuttle train. Second, to participate in the shuttle program, an elevator may have to load as many as three trains per month. With a 10-day interval between trains, any shortage of grain on hand could result in the elevator missing a shuttle train. Finally, it may be risky for the elevator to plan on accumulating a trainload from farms or nearby elevators by truck within 15 hours, particularly during periods of inclement weather or load limits. In many respects, storage provides a buffer against uncertainties in supply.

[15]This value is computed from the BNSF Grain Elevator Directory available via the Internet at *bnsf.com*.

## Side Track Capacity

***Side track*** capacity is another facet of shipper facilities that impacts railroads and the logistical efficiency of the rail system. Side track capacity is measured in equivalent rail cars. For example, a Trinity Industries 286,000-pound gravity discharge-covered hopper car is approximately 60 feet in length between coupling faces. Fifty-two such cars would occupy approximately 3,120 feet of side track; 110 would occupy 6, 600 feet. The examples understate actual track capacity needed, because the cars must be spotted some minimum distance (e.g. 150 feet) beyond the switch, and some minimum distance (e.g., 100 feet) from the elevator.

Approximately 1,500 grain elevators in the United States are located on the BNSF system. About 40% of these elevators have track capacities of 26 cars or more. Another 30% can handle 52 cars with a single switch; however, only 12% of elevators located on the BNSF system can accommodate more than 100 cars with a single switch.[16]

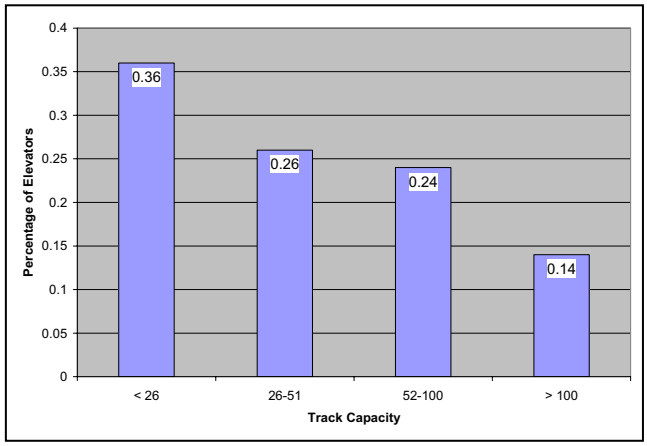



**Figure 12.** Percentage of BNSF Elevators in North Dakota by Track Capacity – Source: BNSF 2004 Grain Elevator **Directory**

As Figure 12 shows, a similar situation exists with respect to North Dakota elevators. Approximately 36% of BNSF's North Dakota elevators cannot accommodate 26 cars without an additional switch. Moreover, fewer than 15 percent of BNSF's North Dakota elevators can accommodate more than 100 cars in a single switch. The data underscore the conclusion that substantial investments may be needed in shipper facilities if North Dakota elevators are to take advantage of 100-car rate structures.

[16]This information was compiled from the BNSF Grain Elevator Directory located at *www.bnsf.com* Internet address.

## Shuttle Train Elevators

Shuttle facilities have become more predominant in North Dakota since the 1998 rail plan. A shuttle train is typically a 110-car train which utilizes high capacity 286,000 lb. cars. Most shuttle trains have dedicated power and the cars remain together on subsequent trips. As mentioned above, for an elevator to take advantage of shuttle train service, adequate track and storage capacity, in addition to fast loading equipment, are needed. Other requirements for shuttle facilities vary by railroad.

## BNSF Railway Requirements

On the BNSF network, a shuttle facility is defined as a "facility that can accept 110-cars in one string and can load or unload them in 15 hours without ***fouling the main line***." Products shipped in the BNSF shuttle program include: corn, wheat, and soybeans.[17]

## CPR Requirements

Within the CPR network, shuttle trains are referred to as ***efficiency trains.*** An efficiency train consists of 100 cars which has dedicated locomotive power. An efficiency train elevator is required to be able to load 100 cars within 24 hours without fouling the main line. All efficiency train facilities on the CPR and DMVW networks meet these requirements.[18]

CPR allows two exceptions to the efficiency train requirements. One is granted to elevators on NPR lines, because much of CPR grain movement originates on NPR lines. NPR restricts train length to a maximum of 75 cars, so CPR allows elevators on NPR lines to load 75 cars to which 25 cars will be added when the train reaches the CPR main line. The other exception is a pooling arrangement allowed between adjacent elevators, where each loads a certain number of cars which are later combined to make up the 100 car train. Efficiency trains loaded using the pooling arrangement typically do not have dedicated power.

[17]Source: http://www.bnsf.com
[18]Source: CPR Tariff Bulletin CPRS 4444-B Item 275

## Shuttle Impacts

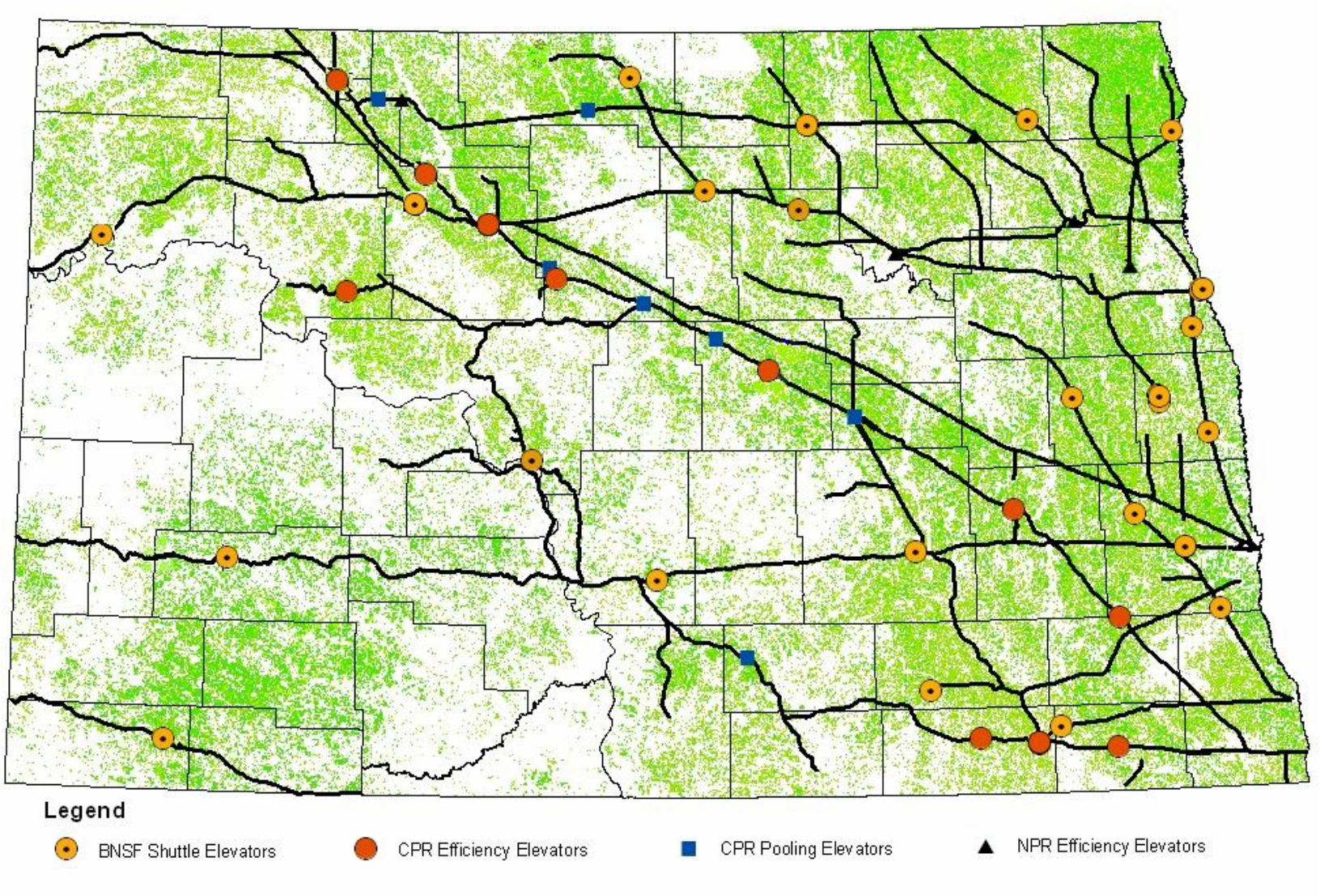
The recent rise in the number of shuttle elevators in North Dakota has changed the traditional pattern of farm to market grain movement from smaller loads moving shorter distances to many locations to heavy loads moving longer distances to fewer locations.

Shuttle loader facilities are located to optimize railroad and crop access. Quite often, such a location is not on an interstate or principal arterial highway. The high throughput of shuttle loaders creates heavy truck traffic on the road networks that support them, sometimes necessitating more frequent maintenance, repair or reconstruction of the roads than was originally planned.

It is expected that the shuttle loader distribution throughout the state will stabilize, but present conditions make it difficult to predict when that might occur. Construction of alternative energy plants that use corn and oilseeds as raw material will have an impact on the movement of these commodities. That in turn might impact the number and location of shuttle loading facilities in the state. It is also possible that alternative energy plants might have an impact on the transportation system similar to that of shuttle loaders, depending on how much throughput occurs as a result of their operations.

Figure 13 show the locations of shuttle and efficiency train elevators in North Dakota. The map is overlaid on a crop layer representing agricultural production levels across the state. Four types of elevators are included: BNSF 110-car shuttle elevators, CPR Efficiency Elevators, CPR Efficiency Pooling Elevators, and the 75-car limited NPR Efficiency Elevators.

**Figure 13.** Locations of Shuttle Elevators in North Dakota



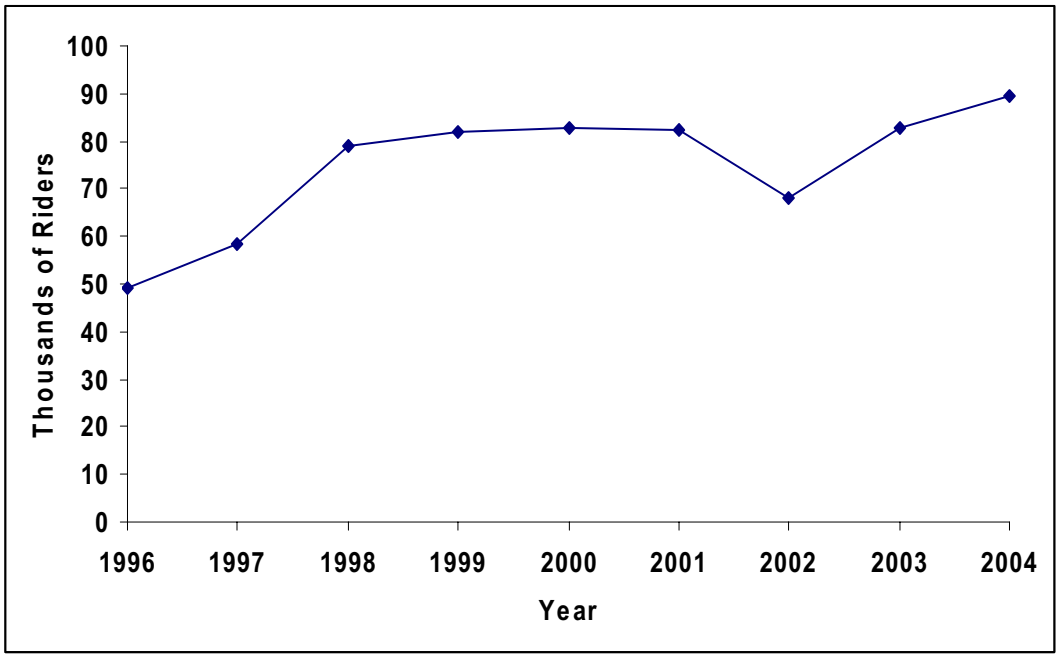
## RAIL PASSENGER SERVICES AND TRAFFIC LEVELS

The only passenger rail service available in North Dakota is Amtrak's Empire Builder. The Empire Builder runs from Chicago to Seattle and Portland. In North Dakota, the train operates on the BNSF main line from Fargo to Grand Forks to the Montana border, crossing in Montana near Fort Buford. The Empire Builder stops at depots in Fargo, Grand Forks, Devils Lake, Rugby, Minot, Stanley, and Williston. Service occurs twice daily, with one train in each direction.

Figure 14 illustrates trends in ND Amtrak ridership since 1996. Table 3 lists ridership statistics by station. As Figure 14 shows, there was an increase in ridership from 1996 to 1998, then little change between 1998 and 2001. A reduction in service frequency caused a loss of ridership in 2002. Service frequency was restored the next year. Ridership levels increased and have continued to maintain an upward trend.

As Table 3 shows, Minot generates the most riders of any North Dakota station by quite a large margin. The reason is not readily apparent.

**Figure 14.** Total Amtrak Ridership in North Dakota 1996-2004




Source: Amtrak

**Table 3.** Amtrak Ridership Statistics for North Dakota

| City | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|
| Devils Lake | 3,446 | 3,773 | 4,236 | 4,713 | 3,974 | 4,726 | 4,834 | 6,039 |
| Fargo | 16,223 | 16,577 | 15,546 | 14,738 | 11,637 | 13,869 | 15,546 | 18,812 |
| Grand Forks | 13,717 | 13,300 | 13,235 | 12,923 | 10,481 | 13,024 | 14,638 | 17,847 |
| Minot | 25,333 | 25,822 | 26,907 | 26,169 | 22,522 | 27,493 | 29,511 | 33,314 |
| Rugby | 3,884 | 4,708 | 4,799 | 5,304 | 4,179 | 4,940 | 5,533 | 6,272 |
| Stanley | 1,907 | 2,068 | 2,221 | 2,104 | 2,112 | 2,678 | 2,688 | 2,694 |
| Williston | 14,653 | 15,609 | 15,994 | 16,320 | 13,328 | 16,196 | 16,659 | 19,504 |
| **Total** | **79,163** | **81,857** | **82,938** | **82,271** | **68,233** | **82,926** | **89,319** | **104,482** |

Source: Amtrak -1998 and 1999 are calendar year. 2000-2004 are 1 October-30 September.

# CHAPTER 3

# RAILROAD FREIGHT ASSISTANCE PROGRAMS AND GUIDELINES

## BRIEF HISTORY

In 1985, NDDOT established a revolving loan fund with dollars from its LRSA grant. LRSA became Local Rail Freight Assistance (LRFA) in 1989 when Congress once again modified the program and changed its name. In addition to the name change, Congress restricted LRFA funds to lines with less than five million gross tons per mile, but at least 20 carloads per mile, in the year previous to the year of application for assistance. There is no waiver provision for the 20 carloads per mile requirement if the operating railroad cannot guarantee at least 40 carloads per mile for each of the first two years following the expenditure of assistance funds. These changes essentially made Class I railroads ineligible for LRFA assistance, other than for low traffic density branch lines.

The North Dakota LRFA loan program makes available reduced-interest loans, primarily for infrastructure projects on short line railroads.[19] The funds retain their federal identity. The program was created to keep the state rail assistance funds from being depleted and to provide railroads with an alternative to commercial lending sources. The low interest rate and 10-year repayment period help improve railroad cash flow. The LRFA loan fund retains the principal from repaid loans, plus the interest the LRFA account itself bears.

In 1997, NDDOT established a second revolving loan fund, called the Freight Rail Improvement Program (FRIP) fund, using interest from repaid LRFA loans as a funding source. FRIP is similar in purpose to LRFA, but the funds are state funds and there is more latitude allowed in their use. FRIP is funded with interest from repaid LRFA loans, principal and interest from repaid FRIP loans, and the interest the account itself bears.

NDDOT freight rail assistance presently consists of the LRFA and FRIP loan funds. There is presently no additional money available for these loan funds other than the interest sources already mentioned. LRFA and FRIP are described in greater detail in the next section.

[19]The interest rate on the loans typically was several points below the prime commercial lending rate.

## LOCAL RAIL FREIGHT ASSISTANCE GUIDELINES

Title 49 of the United States Code describes three potential purposes or uses of federal financial assistance to states under LRFA:

1. rail-line acquisition
2. rail-line rehabilitation
3. construction of new facilities

Federal funds may also be used for improving and rehabilitating rail property, but only to the extent necessary to allow adequate and efficient transportation on the line. In all cases, the railroad must certify the line related to the project meets the traffic density criteria previously mentioned.

A state may use federal funds to acquire an interest in a rail line or rail property for the purpose of maintaining existing rail service or to provide future service. The Surface Transportation Board must have authorized abandonment or discontinuance of service on a line before it may be acquired with federal funds.[20] It is currently NDDOT policy to not own or operate rail lines.

Federal funds may also be used for building rail or rail-related facilities that will improve the quality and efficiency of the state's rail freight transportation system. Eligible uses include new connections between at least two existing rail lines, intermodal freight terminals, sidings, bridges, and relocation of existing lines.

Three basic conditions must be met for a project to be eligible for LRFA funds:

1. The railroad must certify that the rail line meets traffic density criteria.
2. The ratio of benefits to costs for the project must be greater than 1:1.
3. The state where the project resides must have an adequate plan for rail transportation service in the state and a suitable process for updating, revising, and modifying the plan.

The full text of the federal rail assistance guidelines is presented in Appendix A.

As Appendix H shows, NDDOT has used rail assistance funds to provide more than $26 million, $23 million in revolving loan funds and $3 million in other assistance, since 1979 to rehabilitate more than 600 miles of rail line in the state. Without state rehabilitation assistance, some of the segments would have been abandoned. Preservation of the rail lines has helped maintain transportation competition for many North Dakota shippers and, in many cases, has resulted in transportation cost savings for producers and manufacturers located on the lines. The full text of the federal rail assistance guidelines is presented in Appendix F.

[20] Rail lines exempted from the abandonment requirements also qualify.

## NORTH DAKOTA FREIGHT RAILROAD IMPROVEMENT PROGRAM

Part 1 of Appendix G describes the process and information required when applying for financial assistance under FRIP. Part 2 of Appendix G contains a description of the process used by the department to rate and rank submitted projects and to determine the amount potentially available for assistance. Part 2 also lists several obligations the applicant incurs with acceptance of assistance.

Eligible applicants under FRIP include counties, cities, railroads, or current or potential users of freight railroad service. An eligible project generally is one in which the line related to the project has carried less than five million gross ton-miles of freight per mile in the year previous to the year of application and which accomplishes any of the following objectives: rehabilitates a segment of rail line, results in economic development, improves transportation efficiency, promotes safety, promotes the viability of the state freight rail system, assists intermodal freight movement, or provides industry access to the national railroad system. The Director may waive the five million gross ton-miles requirement for a project if is determined that a significant public interest exists.

FRIP project applications are evaluated on the basis of six criteria, each with a weighted value. The rating system generates a score for establishing project qualification and ranking. The six criteria are:

1. Benefit-cost ratio
2. Line traffic density (same as LRFA)
3. System connectivity enhancement
4. Enhancement to North Dakota's economy
5. Safety and security enhancement of ND rail system
6. Environmental and community impacts.

## BENEFITS OF RAIL FREIGHT ASSISTANCE PROGRAMS

NDDOT has provided more than $26 million in assistance since 1979 to rehabilitate more than 650 miles of rail line in the state and to help improve rail-related facilities. Without state assistance, some of the rail line would have been abandoned. Preservation of the lines has helped maintain rail access, in some cases to more than one railroad, for many North Dakota producers and manufacturers, resulting in transportation cost savings for them. Although safety benefits are difficult to quantify, it is clear that state rehabilitation funding assistance has the probability of derailments on many miles of improved lines and has had a positive effect on railroad safety. In addition, the preservation of rail lines has helped slow the increase of heavy truck axle loads on the state's highways, particularly the rural collectors. Finally, the freight rail assistance programs have allowed some rural communities to maintain connectivity with the national freight rail system, helping to maintain the economic base of rural areas of the state.

# HIGHWAY-RAIL GRADE CROSSING SAFETY PROGRAMS

About every 90 minutes someone in America is hit by a train.[21] Tragically, most of those occurrences are avoidable. Most crossing accidents occur because motorists ignore warning signs, signals or safety gates. Many people seem unaware that it takes a train traveling at 50 mph approximately a mile and half to stop.

This chapter describes federal and state programs and related activities aimed at improving grade crossing safety. The chapter begins with a brief history of the programs, followed by a discussion of the current federal action plan and state safety improvement activities.

## BRIEF HISTORY

In 1970, Congress passed the Federal Railroad Safety Act and the Highway Safety Act. Provisions in these laws required comprehensive studies of issues related to public and private safety at grade highway-rail crossings. Agencies were to make recommendations for appropriate action to increase safety at these crossings for both the public and the railroads.

The Federal Highway Administration (FHWA) and Federal Railroad Administration (FRA) subsequently prepared a report for Congress. Based on the report's recommendations, Congress established a program to eliminate hazards at highway–rail at grade crossings. Section 203 of the Highway Safety Act of 1973 authorized $175 million from the Highway Trust Fund for crossing improvements on the Federal-aid highway system.[22]

A 1975 inventory revealed that 77 percent of highway–rail crossings were located off the federal aid highway system and thus were not eligible for improvement with Section 203 funds. In 1976, Congress provided funding for all public crossings. The program has been renewed in some form with each transportation bill passed since then. The funds are referred to as Section 130 funds.

Grade crossing funds are apportioned to states in the following manner:

1. 50 percent based on the ratio of the number of public crossings in the state to the number of public crossings in the country. The ratio determines the portion each state gets.
2. 50 percent on the basis of a formula that considers area, population, and road mileage. The formula determines each state's share.

[21] Estimate by Federal Railroad Administration.

[22] Ibid.

At least 50 percent of the funds apportioned to a state must be made available for the installation of grade crossing warning devices.[23] The remaining funds may be used for crossing elimination,[24] reconstruction of existing ***grade separations***, or other eligible uses as determined by FHWA. The federal share of section 130 projects is 90 percent. The remaining 10 percent of improvement costs usually comes from the state, local governments, or the railroad.[25]

Congress established a general hazard elimination program in the Surface Transportation Assistance Act of 1978. The hazard elimination program – described in 23 U.S.C. 152 – provides funds to each state to "identify hazardous locations...and establish and implement a schedule of projects for their improvement."[26] Hazard elimination funds may be used for improvement of highway–rail at grade crossings.

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 renewed sections 130 and 152 and established the Surface Transportation Program. The Surface Transportation Program provides funds for a variety of purposes including rail-highway grade crossings and hazard elimination. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users of 2005 (SAFETEA-LU) continues funding for rail-highway grade crossing safety and hazard elimination.

Driver education and enforcement programs are major elements of federal and state highway safety improvement programs. Operator Lifesaver is perhaps the best known grade crossing educational program. Operator Lifesaver began with a cooperative agreement between the Union Pacific Railroad and the state of Idaho in 1972. Other state programs followed. In 1978, the National Safety Council was designated as the national coordinator for individual state efforts and charged with the "development, implementation, and evaluation of a national Operation Lifesaver program."[27] In ISTEA 1991, Congress directed the Secretary of Transportation to set aside $300,000 each fiscal year for support of Operation Lifesaver.[28] Funding for Operation

[23]Warning devices include crossbucks, warning signs, pavement markings, flashing light signals, automatic gates, illumination, and other eligible devices as determined by FHWA.

[24]Crossing eliminations include new grade separations, relocation of highways, relocation of railroads, and other crossing closures that occur without construction.

[25]The railroad share of projects that eliminate crossings at which active traffic control devices are in place, or are scheduled to be installed is 5 percent. Generally, railroads cannot be required to contribute to other types of improvement projects financed with federal funds. The railroad share, if any, of the cost of grade crossing improvements shall be determined in accordance with 23 CFR part 646, subpart B (Railroad-Highway Projects).

[26]Funds authorized to carry out this section can be expended on any public road, other than a highway on the Interstate System. The federal cost share under this section is 90 percent.

[27]U.S. Dept. Of Transportation. Railroad-Highway Grade Crossing Handbook, 2nd Edition, 1986.

[28]The ISTEA amended 23 U.S.C. section 104(d) to provide for Operation Lifesaver funding.

Lifesaver has been renewed with each subsequent transportation bill and is continued under SAFETEA-LU.

## U.S. DEPARTMENT OF TRANSPORTATION ACTION PLAN

According to the Federal Railroad Administration (FRA), the section 130 program has saved more than 10,500 lives and prevented 51,000 injuries since its inception in 1974. Since 1994, grade crossing safety efforts have resulted in a 48% reduction in the number of crossing fatalities despite steadily growing exposure.[29]

In 1994, USDOT formulated a Rail-Highway Crossing Safety Action Plan designed to build on early successes of safety efforts. New and improved technologies and engineering solutions were an essential part of the plan, addressing three dimensions or systems:

1. onboard systems, such as train horns
2. highway systems, such as traffic control devices
3. multimodal communication links between highway and rail systems.[30]

The safety action plan set forth strategies related to enforcement, engineering, education, research, and public awareness – all crucial aspects of grade crossing safety. The goal was to achieve at least a 50% reduction from 1994 grade crossing accident and fatality levels by 2003. The plan was also designed to instill an attitude of "zero tolerance" for highway-rail crossing collisions, fatalities, and injuries.[31]

### Onboard Railroad Warning and Sounding Devices[32]

Research continues regarding the cost-effectiveness of alternative onboard warning devices. Although the relative cost-effectiveness of the train horn has not been established, a 1995 nationwide study by FRA suggests that silencing train horns increases crash risks by 84%.[33] Moreover, a study of local whistle bans on the Florida East Coast Railway found that crashes at

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[29]Estimate by Volpe Center, U.S. DOT.

[30]Ibid.

[31]Testimony of Jolene M. Molitoris, Federal Railroad Administrator, before the House Committee on Transportation and Infrastructure, Subcommittee on Railroads, April 1, 1998.

[32]This section is summarized from: (1) the 1994 "Rail-Highway Crossing Safety Plan," by FRA, (2) testimony of Jolene M. Molitoris, Federal Railroad Administrator, before the House Committee on Transportation and Infrastructure, Subcommittee on Railroads, April 1, 1998, and (3) Volpe Center, *Highway-Rail Grade Crossing Safety Research Bulletin*, 1998.

[33]Testimony of Jolene M. Molitoris, Federal Railroad Administrator, before the House Committee on Transportation and Infrastructure, Subcommittee on Railroads, April 1, 1998

crossings with flashing lights and gates tripled when train horns were banned.[34] This finding led FRA to issue Emergency Order No. 15 in July, 1991, which required railroad operators to "sound the horn." Subsequently, in the Federal Railroad Safety Authorization Act of 1994, Congress directed FRA to require the use of train horns at highway-rail crossings.[35] FRA was given authority to allow exceptions where supplementary safety measures fully compensated for the absence of a train horn. Also, the sounding of locomotive horns at public crossings was subject to applicable state and local laws, and many local governments legislated *whistle bans*, or quiet zones*,* within their communities.

FRA interprets the 1994 statute to mean that "at a minimum, flashing lights and gates should be provided at crossings where train horns are silenced."[36] In evaluating exceptions to the train-horn rule, FRA also judges "what supplementary measures, provided by local traffic control authorities or law enforcement authorities, will be sufficient to compensate for loss of the train horn on corridors already equipped with flashing lights and gates."[37]

In 2005, in response to a legislative mandate, FRA issued a Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings. The Rule became effective June 24. It pre-empted state and local laws regarding train horn use, but allowed the creation of quiet zones if specified criteria were met. The rule also detailed actions communities with existing whistle bans could take to preserve the quiet zones they had become accustomed to.

In North Dakota, the city of Fargo, in cooperation with Moorhead, MN, has received FRA approval to establish a Fargo-Moorhead Quiet Zone along the BNSF mainline that runs through the downtown areas of both cities. Implementation of this quiet zone is beginning in 2006 and will require supplemental safety measures at some crossings and closure of others. Some other cities in North Dakota, including Bismarck and New Salem, have expressed interest in quiet zones.

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[34] Ibid.

[35] Specifically, Title 49 U.S.C. § 20153 states that: *the Secretary may except from the requirement to sound the locomotive horn any categories of rail operations or categories of highway-rail grade crossings (by train speed or other factors specified by regulation)—(A) that the Secretary determines not to present a significant risk with respect to loss of life or serious personal injury; (B) for which use of the locomotive horn as a warning measure is impractical; or (C) for which, in the judgment of the Secretary, supplementary safety measures fully compensate for the absence of the warning provided by the locomotive horn.*

[36] Testimony of Jolene M. Molitoris, Federal Railroad Administrator, before the House Committee on Transportation and Infrastructure, Subcommittee on Railroads, April 1, 1998

[37] Ibid.

## Conspicuous Locomotives

Visual warning of an on-coming train is especially important at crossings with passive warning. In 1991, FRA began researching *conspicuous locomotives*. It later published rules to encourage the industry to adopt changes to make locomotives more visible to motorists and pedestrians.[38] Subsequently, railroads installed additional lights, called "ditch lights" on locomotives. The ditch lights are mounted at the front of the locomotive, low, one on each side. The ditch lights and the main headlights form a triangular pattern when viewed from the front. The triangular pattern and increased light output makes the train more visible and provides motorists and pedestrians with better perception of the size and speed of the approaching locomotive. A FRA benefit/cost analysis claims that installation of ditch lights has reduced grade crossing accidents "in the range of ten percent" for locomotives so equipped.[39]

## Reflectorized Rolling Stock

The USDOT Volpe National Transportation Systems Center (Volpe) is researching the feasibility and safety benefits of placing reflective materials on the sides of rail cars to help prevent the type of crash where a motorist drives into the side of a train that is occupying a highway-rail crossing.[40] Volpe has concluded that suitable materials are available for this purpose. However, Volpe is still evaluating issues related to the effectiveness of reflective materials on rail cars, such as the effects of horizontal and vertical angles of approaching automobile and truck headlights and the effects of road curvature on driver recognition of retro-reflective devices. [41]

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[38]FRA issued the first interim regulation on this subject in 1994 to encourage early installation. The requirement for Locomotive Alerting Lights became fully effective Dec. 31, 1997, and is now required by law.

[39]Testimony of Jolene M. Molitoris, Federal Railroad Administrator, before the House Committee on Transportation and Infrastructure, Subcommittee on Railroads, April 1, 1998

[40]Title 49 U.S.C. § 20148 directs the Secretary to *initiate a rulemaking proceeding to prescribe regulations requiring enhanced visibility standards for newly manufactured and remanufactured railroad cars. In such proceeding the Secretary shall consider, at a minimum—(1) visibility of railroad cars from the perspective of non-railroad traffic; (2) whether certain railroad car paint colors should be prohibited or required; (3) the use of reflective materials; (4) the visibility of lettering on railroad cars; (5) the effect of any enhanced visibility measures on the health and safety of train crew members; and (6) the cost/benefit ratio of any new regulations.*

[41]Testimony of Jolene M. Molitoris, Federal Railroad Administrator, before the House Committee on Transportation and Infrastructure, Subcommittee on Railroads, April 1, 1998.

## Highway System Engineering and Enforcement Innovations

A long-term goal of USDOT is to separate or close crossings on the National Highway System. For other at-grade crossings, USDOT describes several highway engineering improvements that warrant further research and debate, include the following:

- median barriers to keep motorists from going around gates;
- paired one-way streets with gates extending across all lanes;
- four-quadrant gates that block all lanes of travel;
- temporary closure of roads during whistle ban hours.

Electronic enforcement, such as automated photographic identification, may prove to be an effective deterrent to those who drive around crossing gates or ignore other warning devices. Moreover, low-cost options may be useful at crossings that lack automated warning devices.

## Enhancements of Highway-Railroad Interface

At many locations, the linkage between grade crossing warning systems and highway traffic signals is of critical importance. The automated warning devices predict the arrivals of trains and the traffic signals respond by providing clearance for traffic on or near the crossing.

In a demonstration project, Amtrak is installing a four-quadrant gate arrangement at a school street crossing in Connecticut in which "presence detection" is integrated with an enhanced train control system. In this system, the presence of an obstacle is communicated to a train in time to permit it to stop short of an occupied crossing.[42]

## Obstruction of Visibility

Removing or modifying obstructions to visibility at highway-rail crossings is a low-technology solution that can have large payoffs. However, solutions to visibility problems frequently require communication and coordination among railroads, abutting property owners, and highway or public authorities.

[42] Ibid.

## STATE GRADE CROSSING SAFETY PROGRAMS

The North Dakota rail-highway crossing program complements the federal plan and continues an on-going grade crossing improvement program that began in 1978. Since then, the state has spent more than $30 million participating in approximately 600 grade crossing safety improvement projects.

ND develops an annual list of crossing safety projects.[43] [44] Initially, state efforts focused on signal installation on Class I railroad main line crossings because of the higher number of trains and greater train speeds. The crossings with a minimum highway traffic count of 100 vehicles per day have been signalized, with few exceptions. The emphasis has now shifted to branch line and other crossings with safety concerns.[45]

The grade crossing program has positively impacted safety in North Dakota. There were approximately 100 motor vehicle accidents per year at railroad crossings in the mid 1970s. In 2005, there were 18. On average, there are 75% fewer grade crossing accidents annually now than there were in 1975.

The state is aware of the noise impacts of train horns on communities and encourages continued FRA and Volpe research into alternative audible train warning devices. However, substantial evidence exists that banning train horns in the absence of other effective audible warning devices increases the risks of crossing accidents. The state does not support additional exceptions to the train horn under 49 U.S.C. § 20148 unless the Secretary of Transportation determines that silencing the train horn will not pose a significant risk and supplementary safety measures exist which fully compensate for absence of the horn.

If the cost-effectiveness of alternative onboard or wayside warning devices can be established, NDDOT encourages railroads to adopt new and effective warning technologies that will mitigate community noise impacts. However, the state is opposed to the substitution of new train warning devices for train horns if such substitutions would diminish safety levels.

NDDOT believes that the removal or mitigation of obstructions to visibility at highway-rail crossings can reduce the risk of accidents and may be a cost-effective way to reduce hazard. The state encourages proper vegetation planning and control by railroads and other property owners in the vicinity of grade crossings. NDDOT also supports evaluation of crossings where highway

[43]The maintenance of warning devices is the responsibility of the railroad. NDDOT participates in the cost of installing rubber or concrete crossing surfaces if the work is required as part of a federal-aid highway construction project.

[44]State-of-the-art reflectorized material is placed on the front and the back side of the crossbucks to increase visibility, especially at night.

[45]The DOT cooperates with the North Dakota Public Service Commission to address safety at specific crossings of concern to the Commission.

curvature or alignment near the crossing might make it difficult for a driver to see an oncoming train.

NDDOT encourages railroads to adopt cost-effective methods of reflectorizing rail cars and encourages demonstration projects by FHWA and FRA to assess the cost-effectiveness of highway engineering improvements such as four-quadrant gates and median barriers. The state also supports continued evaluation of Intelligent Transportation System solutions to grade crossing safety and urban congestion problems.

## OPERATION LIFESAVER

In 1972, a concerned Union Pacific Railroad employee, working with the support of many Idaho communities, established a state-wide public education program called Operation Lifesaver (OL) in an effort to reduce the numbers of crashes, injuries and fatalities occurring at highway-rail at grade crossings. The crossing fatality rate in Idaho dropped 43 percent in the first year of OL. In 1973, the same education program was started in Nebraska, where there was a 26 percent reduction in the collision rate. In recent years, increased emphasis has been placed on reducing and preventing the injuries and fatalities caused by people trespassing on railroad property, in addition to the effort to reduce crashes at crossings.

Operation Lifesaver is now active in the 49 continental United States and Washington, D.C. In addition, OL is active in Canada, Mexico, Argentina, England and Estonia. Since its inception in 1972, this public education program has dramatically reduced injuries and fatalities at rail crossings. A cooperative effort involving *education*, *engineering* and *enforcement* continues to make the program successful. **Education** is provided by Operation Lifesaver certified volunteers. **Engineering** is provided by the professionals who are responsible for improving and maintaining the crossings. **Enforcement** is provided by state and local law enforcement officers who patrol the public highways and by railroad police officers who guard railroad right-of-way and other property against trespassers.[46]

The North Dakota Operation Lifesaver program conducts nearly 500 grade crossing safety presentations annually. North Dakota Operation Lifesaver also serves as a source for grade crossing safety educational materials and statistics.

46 Operation Lifesaver background information obtained from http://www.oli.org and http://www.ndsc.org/livesaver.asp

# APPENDIX A:

# TRAFFIC AND COMMODITY STATISTICS

## RAILROAD STATISTICS

Table A.1– BNSF Traffic Originated or Terminated in North Dakota in 2004, by STCC*

| STCC | Commodity | Carloads Originated in ND | Carloads Terminated in ND | Carloads Transported in ND | Percent of Carloads Carried |
|---|---|---|---|---|---|
| 1 | Farm Products | 61,028 | 5,417 | 87,067 | 31.5% |
| 11 | Coal | 48,163 | 8,413 | 108,177 | 39.1% |
| 20 | Food and kindred products | 19,580 | 1,248 | 40,756 | 14.7% |
| 28 | Chemicals and allied products | 1,677 | 5,892 | 8,824 | 3.1% |
| 29 | Petroleum and coal products | 2,872 | 2,899 | 6,877 | 2.4% |
| 40 | Waste and scrap materials | 1,087 | 699 | 4,053 | 1.5% |
| | **Grand Total, Carload Traffic** | 135,698 | 94,442 | 276,534 | |

**Source: Report to the North Dakota Public Service Commission, 2005**. * Only commodities comprising at least 1 percent of carloads are shown. Thus, percentages may not equal 100 percent.

Table A.2– CPR Traffic Originated or Terminated in North Dakota in 2004, by STCC*

| STCC | Commodity | Carloads Originated in ND | Carloads Terminated in ND | Percent of Carloads Carried |
|---|---|---|---|---|
| 1 | Farm Products | 51,292 | 3,899 | 63.8% |
| 20 | Food and kindred products | 16,484 | 113 | 19.2% |
| 28 | Chemicals and allied products | 285 | 6,610 | 7.9% |
| 40 | Waste and scrap materials | 3,596 | 2 | 4.2% |
| 32 | Stone, clay and glass | 1 | 2,966 | 3.4% |
| | **Grand Total, Carload Traffic** | 71,841 | 94,442 | |

**Source: Report to the North Dakota Public Service Commission, 2006**. * Only commodities comprising at least 1 percent of carloads are shown. Thus, percentages may not equal 100 percent.

**Table A.3 – DMVW Traffic Originated or Terminated in North Dakota in 2004**

| Description | Originated Traffic | | Terminated Traffic | | Total Traffic | |
|---|---|---|---|---|---|---|
| | Carloads | Tons | Carloads | Tons | Carloads | Tons |
| Wheat (except durum) | 5,920 | 592,000 | 0 | 0 | 5,920 | 592,000 |
| Durum | 2,932 | 293,200 | 0 | 0 | 2,932 | 293,200 |
| Barley | 159 | 15,900 | 0 | 0 | 159 | 15,900 |
| Sunflowers | 121 | 12,100 | 0 | 0 | 121 | 12,100 |
| Corn | 4,960 | 496,000 | 0 | 0 | 4,960 | 496,000 |
| Flax | 324 | 32,400 | 0 | 0 | 324 | 32,400 |
| Oats | 110 | 11,000 | 0 | 0 | 110 | 11,000 |
| Soybeans | 2,668 | 266,800 | 0 | 0 | 2,668 | 266,800 |
| Fertilizer | 0 | 0 | 329 | 32,900 | 329 | 32,900 |
| Misc | 3,443 | 344,300 | 1,594 | 159,400 | 5,037 | 503,700 |
| **Total** | **20,692** | **2,069,200** | **2,108** | **210,800** | **22,800** | **2,280,000** |

**Source: Report to the North Dakota Public Service Commission, 2005. *Only commodities comprised of greater than 100 carloads are reported.**

**Table A.4 – NPR Traffic Originated or Terminated in North Dakota in 2004**

| Description | Originated Traffic | | Terminated Traffic | | Total Traffic | |
|---|---|---|---|---|---|---|
| | Carloads | Tons | Carloads | Tons | Carloads | Tons |
| Wheat (except durum) | 7,855 | 1,021,150 | 0 | 0 | 7,855 | 1,021,150 |
| Durum | 661 | 85,930 | 0 | 0 | 661 | 85,930 |
| Barley | 2,564 | 333,320 | 0 | 0 | 2,564 | 333,320 |
| Sunflowers | 16 | 2,080 | 0 | 0 | 16 | 2,080 |
| Corn | 190 | 24,700 | 0 | 0 | 190 | 24,700 |
| Soybeans | 460 | 59,800 | 0 | 0 | 460 | 59,800 |
| Fertilizer | 0 | 0 | 326 | 42,380 | 326 | 42,380 |
| Misc | 0 | 0 | 460 | 46,000 | 460 | 46,000 |
| **Total** | **11,746** | **1,526,980** | **786** | **88,380** | **12,532** | **1,615,360** |

**Source: Report to the North Dakota Public Service Commission, 2005.**

**Table A.5 – RRVW Traffic Originated or Terminated in North Dakota in 2004***

| Description | Originated Traffic | | Terminated Traffic | | Total Traffic | |
|---|---|---|---|---|---|---|
| | Carloads | Tons | Carloads | Tons | Carloads | Tons |
| Wheat (except durum) | 5,705 | 570,500 | 379 | 37,900 | 6,084 | 608,400 |
| Durum | 0 | 0 | 1,213 | 121,300 | 1,213 | 121,300 |
| Barley | 1,113 | 100,170 | 0 | 0 | 1,113 | 100,170 |
| Corn | 3,057 | 320,985 | 3,083 | 308,300 | 6,140 | 629,285 |
| Steel | 0 | 0 | 1,402 | 154,220 | 1,402 | 154,220 |
| Mill Byproducts | 2,015 | 197,470 | 0 | 0 | 2,015 | 197,470 |
| Soybeans | 2,189 | 251,735 | 517 | 51,700 | 2,706 | 303,435 |
| Other Grain | 765 | 68,850 | 15 | 1,350 | 780 | 70,200 |
| Wheat Flour | 537 | 53,163 | 0 | 0 | 537 | 53,163 |
| Sugar | 2,940 | 323,400 | 0 | 0 | 2,940 | 323,400 |
| Pellets | 987 | 97,713 | 0 | 0 | 987 | 97,713 |
| Fertilizer | 0 | 0 | 721 | 71,379 | 721 | 71,379 |
| Syrup | 5,853 | 573,594 | 0 | 0 | 5,853 | 573,594 |
| Coal | 0 | 0 | 1,354 | 135,400 | 1,354 | 135,400 |
| Petroleum | 0 | 0 | 250 | 17,500 | 250 | 17,500 |
| Aggregate | 0 | 0 | 979 | 97,900 | 979 | 97,900 |
| Scrap | 445 | 44,500 | 470 | 47,000 | 44,945 | 89,445 |
| Misc. | 2 | 190 | 354 | 33,630 | 356 | 33,820 |
| **Total** | **25,744** | **2,614,510** | **11,076** | **1,095,918** | **36,820** | **3,710,428** |

**Source: Report to the North Dakota Public Service Commission, 2005 * Only commodities comprised of greater than 250 carloads are reported.**

## RAIL COMMODITY MOVEMENTS

This section presents an in-depth analysis of commodity movements and describes the markets for North Dakota shipments. It begins with an overview of the principal commodities transported by railroads in North Dakota, followed by a discussion of major grain destinations and rail traffic shares. The grain summary is followed by a digest of coal, chemical, and food products traffic data. The value of North Dakota shipments and the impacts of commodity value on mode choice are summarized in conclusion.

Table A.6 shows percent of the tons originated in North Dakota in 2003 by commodity.[47]

**Table A.6. Top Commodities Originated by Railroads in North Dakota During 2003**

| Commodity | Tons of Freight | Percent of Total |
|---|---|---|
| Farm Products | 12,234,397 | 54 |
| Coal & Chemicals | 4,934,702 | 22 |
| Food Products | 4,465,102 | 20 |
| Waste & Scrap | 488,196 | 2 |
| Petroleum or Coal Products | 214,412 | 1 |

Source: American Association of Railroads, 2005.

[47]The 2003 data in Tables 6 and 7 are based on Class I railroad QCS Reports to the STB and on the AAR's survey of local and regional railroads. They represent the most current complete year of state-level data available at the time this section of the rail plan was prepared. The relative importance of commodities may change somewhat from year-to-year depending on economic and demand factors.

Table A.7 shows percentage of tons terminated in North Dakota during 2003 by commodity.

**Table A.7. Top Commodities Terminated by Railroads in North Dakota During 2003**

| Commodity | Tons of Freight | Percent of Total |
|---|---|---|
| Coal | 5,562,028 | 61 |
| Farm Products | 863,190 | 10 |
| Chemicals | 721,128 | 8 |
| Glass & Stone Products | 556,040 | 6 |
| Nonmetallic Minerals | 555,144 | 6 |

Source: American Association of Railroads, 2005.

## Farm Products Traffic

Two data sources are used to describe farm products shipments: North Dakota Grain and Oilseed Shipment Statistics and the Railroad **Waybill** Sample. The Grain and Oilseed data based on elevator reports to the North Dakota Public Service Commission, referred to hereafter as grain elevator reports. The grain elevator reports include rail and truck shipments to primary terminal markets, such as Minneapolis and Duluth, and to destination regions, such as Gulf Coast, Pacific Northwest (PNW), and Other Minnesota and Wisconsin destinations. The Railroad Waybill data is based on a random sample of railroad shipments reported to the STB. In some cases, the waybill sample provides more specific destination information than grain elevator reports. Moreover, the waybill sample includes descriptive information about shipments, such as length of haul, rate, and variable cost. The two data sources complement each other; together, they provide a comprehensive description of North Dakota farm products movements.

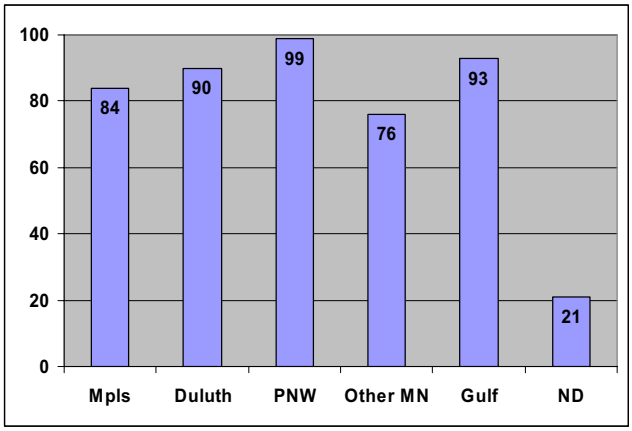



**Figure A.1. Rail Share of Grain Shipments from North Dakota to Major Markets, 2003** – Source: Upper Great Plains Transportation Institute

According to grain elevator reports, between 75 and 80% of the state's grains and oilseeds are shipped by rail. As Figure A.1 shows, rail share tends to be greatest in distant markets. For example, only 21% of grain shipments terminated in state were moved by rail in 2003. These in-state shipments, destined for processing plants and terminal elevators such as the North Dakota Mill & Elevator, usually cover short distances where trucks are more competitive with railroads. In contrast, 84% of the grain moving to Minneapolis and 90% of the grain destined for Duluth travels by rail. Moreover, railroads transport about 93% of grain shipments to the Gulf and 99% of grain shipments to PNW.

Figure A.2 is also based on grain elevator reports. As the chart shows, approximately 42% of North Dakota grain and oilseed shipments were destined for Minneapolis, Duluth, or other Minnesota and Wisconsin destinations in 2004. Many of the shipments terminated at processing plants or mills in MN and WI. However, some percentage may have been transferred to barges at Minneapolis or re-billed to another destination, such as Chicago. The fact that 16% of ND gain and oilseed shipments were terminated in-state illustrates the importance of the local processing sector of the economy.

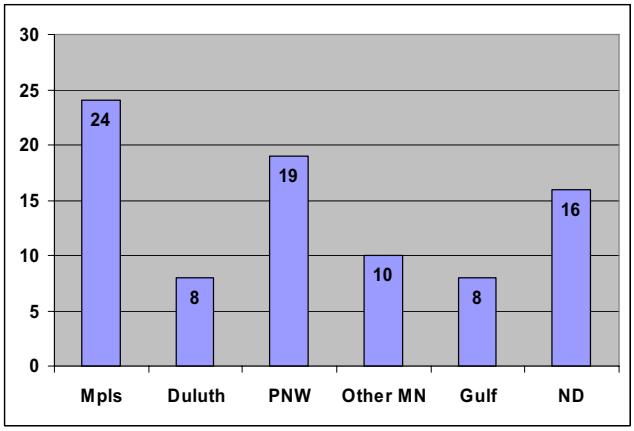



**Figure A.2. Major Markets for ND Grains & Oilseed Shipments, 2003 –** Source: Upper Great Plains Transportation Institute

Table A.8 is based on the waybill sample. As the table shows, Washington is the top destination state for ND farm products, followed by Wisconsin, Minnesota, Illinois, Missouri, and Oregon. The average distance for rail movements to Minnesota is approximately 414 miles. In comparison, the average distance for shipments to Oregon is approximately 1,380 miles.

**Table A.8. Destinations States for Farm Products Originated in North Dakota by Rail; and Average Distances of Shipments – 2003**

| Destination State | Estimated Tons | Average Distance |
|---|---|---|
| WA | 2,886,407 | 1,663 |
| WI | 1,907,100 | 551 |
| MN | 1,702,342 | 414 |
| IL | 1,470,065 | 843 |
| MO | 932,500 | 1,093 |
| OR | 597,773 | 1,380 |
| ND | 526,780 | 167 |
| TX | 452,197 | 1,753 |
| LA | 332,471 | 1,771 |
| AB | 323,498 | 976 |

Table A.9 shows the number of elevators making grain and oilseed shipments, the percent using rail service, the percent shipping in various car block sizes, and the percentage of tons shipped under three railroad service levels during 2004. As Figure A.3 shows, about 67% of grain shipments from BNSF elevators consisted of 50 cars or more. Moreover, shipments of 50 cars or more comprised 63% to 43% of grain traffic handled by CPR, DMVW, NPR, and RRVW.

As Table A.9 shows, 30% of RRVW and 20% of DMVW grain shipments moved in l-to-24 car blocks in 2004. Most movements were 50+ car shipments

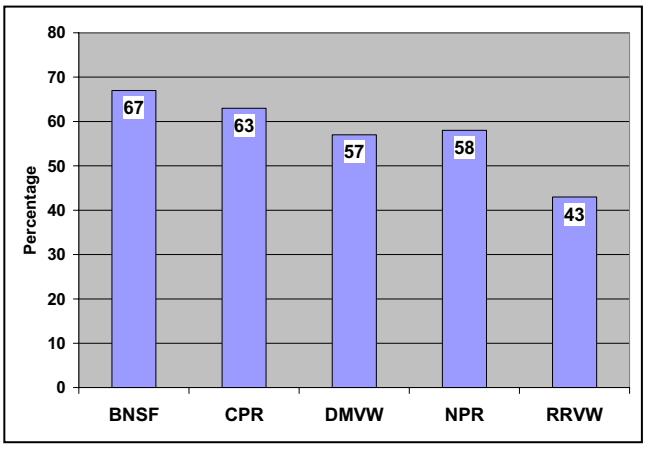



**Figure A.3. Percentages of Grain Shipped in Blocks of 50 Cars or More in 2004 – Source: Upper Great Plains Transportation Institute**

**Table A.9. North Dakota Grain and Oilseed Shipments by Car Block Size**

| | Number Shipping by Car Block Size (Percent of Elevators With a Shipment in Various Car Size Blocks) | | | Tons Shipped by Car Block Size (Percent of Rail Tonnage Shipped in Each Car Size Block) | | |
|---|---|---|---|---|---|---|
| | **1-24 Cars** | **25-49 Cars** | **50+ Cars** | **1-24 Cars** | **25-49 Cars** | **50+ Cars** |
| **BNSF** | 123 (51%) | 72 (30%) | 47 (19%) | 761,405 (13%) | 1,239,784 (21%) | 4,019,229 (67%) |
| **CPR** | 32 (47%) | 23 (34%) | 13 (19%) | 367,273 (17%) | 431,644 (20%) | 1,338,240 (63%) |
| **DMVW** | 17 (37%) | 16 (35%) | 13 (28%) | 277,501 (20%) | 314,736 (23%) | 787,187 (57%) |
| **NPR** | 19 (46%) | 12 (29%) | 10 (24%) | 242,297 (23%) | 186,487 (18%) | 612,226 (58%) |
| **RRVW** | 30 (53%) | 17 (30%) | 10 (17%) | 443,363 (30%) | 403,066 (27%) | 631,965 (43%) |
| **YSVR** | NA | NA | NA | NA | NA | NA |
| **DNRR** | NA | NA | NA | NA | NA | NA |

Source: Upper Great Plains Transportation Institute

## Coal, Chemical, and Food Products Traffic

The railroad waybill sample is the only consistent source of information for commodities other than grain. The waybill sample is collected each year by the Surface Transportation Board. The sampling frame is the terminating railroad. All railroads that terminated more than 4,500 revenue carloads of freight during any of the previous three years, or any railroad that terminated more than 5% of the traffic in a given state during any of the previous three years, must participate in the sample. The sampling unit is the waybill; a document or record that is created each time a shipment is consigned, with the possible exception of contract movements.

The sampling process uses a stratified random sampling procedure based on the number of cars per shipment. The sampling strata and corresponding rates are: 1-to-2 cars (1:40), 3-to-15 cars (1:12), 16-to-60 cars (1:4), 61-to-100 cars (1:3), and more than 100 cars (1:2).

In addition to the waybill sample, the Department of Energy (DOE) publishes information regarding coal movements from mines to utilities. According to DOE and waybill data, about 85% of the coal tonnage originated by railroads in North Dakota is terminated in-state. The remaining lignite coal movements are terminated elsewhere in the northern plains region.

Destinations for food and kindred products are much more dispersed than coal or grain destinations. Illinois, Minnesota, Washington, Texas, Missouri, Washington, and North Dakota were the principal destination states for railroad shipments in 2003 (Table A.10).[48] Average shipment distances ranged from less than 200 miles to more than 2,300 miles. Essentially, all coal, chemical and food products traffic moved in single-car consignments.

[48]The 2003 waybill sample was the most recent data set available at the time the rail was prepared.

**Table A.10. Major Destinations for Processed Food Products Originated in North Dakota by Rail, 2003**

| Destination | Estimated Tons | Average Cars Per Shipment | Average Distance |
|---|---|---|---|
| Illinois | 1,327,920 | 1.09 | 690 |
| Minnesota | 524,220 | 1.70 | 286 |
| Washington | 362,000 | 1.00 | 1,598 |
| California | 334,056 | 3.33 | 2,349 |
| Missouri | 305,520 | 1.21 | 958 |
| Texas | 252,516 | 2.32 | 1,502 |
| North Dakota | 200,608 | 10.03 | 157 |

Source: 2003 Waybill Sample

In summary, more than 78% of farm products traffic terminated in-state in 2003 originated from North Dakota or Montana. Approximately 66% of the chemical shipments terminated in-state in 2003 originated from Alberta, Florida, or Minnesota.

## VALUE OF NORTH DAKOTA SHIPMENTS

The Bureau of Transportation Statistics (BTS) has published estimates of the value of North Dakota shipments and mode use based on the 2002 Commodity Flow Survey (CFS). The CFS is a survey of 200,000 domestic establishments conducted by the Census Bureau. These establishments were randomly selected from a universe of 800,000 establishments in manufacturing, mining, wholesale, auxiliary warehouses, and other select activities in the retail and service sectors of the economy. Note that CFS is a sample of establishments, not of shipments. Moreover, as sample data, the statistics are subject to potential error when used to estimate population values. However, the data are useful for comparison to other data sources and for analyzing the value of shipments and mode share.

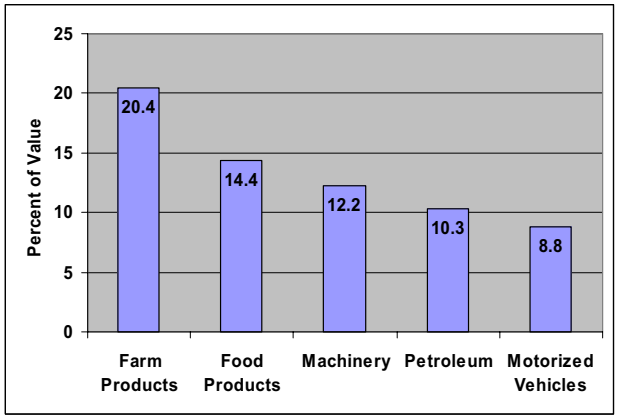



**Figure A.4. Top Commodities Originated in ND, by Value. Source: 2002 Commodity Flow Survey**

Based on this survey, BTS estimates that about 61 million tons of freight was originated by all modes in North Dakota during 2002, and that the goods were valued at approximately $11 billion. Figure A.4 shows the top five commodities originated in North Dakota during 2002 in terms of value.

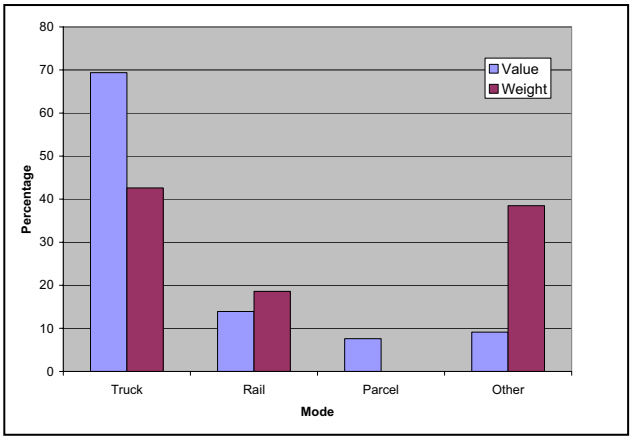



**Figure A.5. Distribution of ND Shipments Among Modes Based on Value and Weight**
**Source: Commodity Flow Survey, 2002**

Figure A.5 shows the estimated distribution of shipments originated from North Dakota by mode of transport. Trucks moved about 69% of the value of originated traffic during 2002, but only 42% of the weight. In comparison, railroads moved about 18.6% of originated shipments in terms of weight, but only 13.9% in terms of value. The comparisons clearly illustrate the distribution of high-value manufactured and low-value bulk products among the two surface modes, particularly when the value of parcel and small freight shipments are considered. About 38% of the value and 56% of the weight of shipments originated in North Dakota were shipped to destinations within the state. About 62% of the value and 29% of the weight of North Dakota shipments went to other states.

# APPENDIX B:

# RAIL-LINE ABANDONMENTS

## RAIL-LINE ABANDONMENTS

Approximately 1,650 miles of railroad have been abandoned in North Dakota since 1936. However, only 26 miles were abandoned prior to 1970. As Figure 20 shows, most of the rationalization occurred during the 1980s, when 715 miles of line were abandoned. 373 miles have been abandoned thus far this decade. The timing of the abandonments reflects deregulation and the cumulative impacts of deferred track maintenance during the 1960s and 1970s.

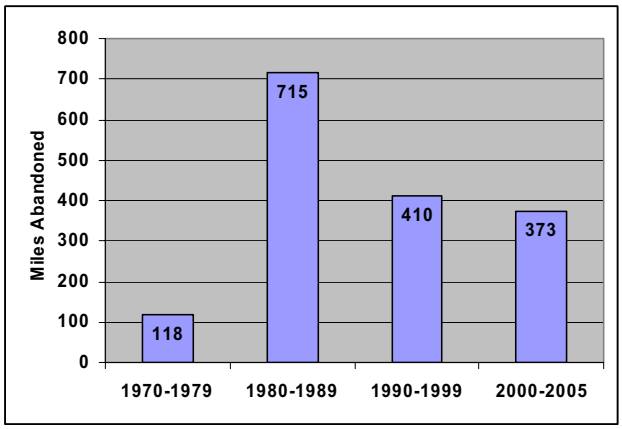



**Figure B.1. Miles of Railroad Abandoned in North Dakota Since 1970**
**Source: North Dakota PSC, NDDOT 2005**

### Abandonment Procedures and Regulations

The **ICC** Termination Act of 1995 requires rail abandonments to be approved by the Surface Transportation Board (STB). STB has established two types of abandonment procedures – Non-Exempt, or full, and Exempt. Railroads may use either or both of these procedures to accomplish abandonments. A brief description of each follows. Virtually all abandonments in North Dakota are Exempt proceedings.

### Full Abandonment

STB evaluates full abandonment filings using two basic criteria. The first is the need of local communities and shippers for continued service. The second is the broader public interest in freeing railroads from financial burdens that drain resources and lessen their ability to operate economically elsewhere. The railroad has to show that continued operation of the line it wants to abandon will be a financial burden.

There are four steps in the Non–Exempt abandonment process. In the first step, railroads communicate full abandonment or discontinuance intentions on what is known as a **System Diagram Map**. The System Diagram Map is used for full abandonments only and nothing related to exempt abandonments appears on it. The System Diagram Map is color-coded to show five categories of lines:

1. Lines or portions of lines for which the railroad expects to file abandonment or discontinuance application within three years of the filing date of the map or amendment;
2. Lines or portions of lines the carrier has under study and believes may be subject to future abandonment or discontinuance application;
3. Lines or portions of lines for which an abandonment or discontinuance application is pending before the STB;
4. Lines that are presently being operated with financial assistance;
5. All other lines or portions of lines the carrier owns and operates, directly or indirectly.

The second step in the Non–Exempt process requires the railroad to provide the STB with a *Notice of Inte*nt, informing it of the railroad's plans to abandon. The Notice of Intent is to be received by STB 15-30 days before an *Abandonment Application* is filed.

Filing an Abandonment Application is the third step in the process. The abandonment application is used by the railroad to provide detailed information about costs and revenues on the subject line, as well as the overall financial condition of the railroad.

The fourth step in the process is the STB decision. After receipt of the abandonment application by the STB, there is a 45-day window during which protests may be filed. All parties involved in the abandonment process may access prior filings, including the System Diagram Map, Notice of Intent, and Abandonment Application, and may base protests upon these documents. If no successful protests are lodged and the railroad can prove that the burden caused by the operation of the line is greater than the benefit of continued operation, the line is abandoned.

## Exempt Abandonment

The Exempt abandonment process is much more streamlined. There is no requirement to file a System Diagram Map or amendment. There are two exempt abandonment procedures, the *Notice of Exemption* and the *Petition for Exemption.*

The most used procedure for ND abandonments is the Notice of Exemption, where the railroad files such notice with the STB. A railroad may file a Notice of Exemption if: 1) no local traffic has moved over a line for at least two years; 2) any overhead traffic on the line can be rerouted over other lines; 3) no formal complaint is filed by a user of the service on the line or by a government entity acting on behalf of a user.

The Petition for Exemption procedure begins with the railroad filing a Petition for Exemption with the STB. The carrier must prove, and STB confirm, the following before approval is granted for the Petition for Exemption:

- that the line is not necessary to carry out the rail transportation policy of the United States Government;
- that the line is of limited scope;
- that continued regulation is unnecessary to protect shippers from abuse of market power.

All abandonment procedures require that opportunity be granted for public protest or comment regarding the abandonment, and that sufficient time be allowed for offers of financial assistance to be made for the purpose of keeping the line in operation.[49]

## Feeder Railroad Development Program

In addition to provisions previously discussed, the ***Staggers Rail Act*** also established the Feeder Railroad Development Program, which gives STB authority to require sales of light-density lines to "responsible owners." A line is eligible for forced sale if it appears in Category 1 or 2 of the System Diagram map but the carrier has not yet filed an abandonment application for it, or if the public convenience and necessity (the pubic good) requires it. To force a line sale under the public convenience and necessity criterion, a potential purchaser must show that:

- the operating carrier has refused to provide adequate service to shippers within a reasonable period of time;
- transportation over the line is inadequate for the majority of shippers;
- sale of the line would not have an adverse financial or operational impact on the current carrier;
- sale of the line would likely result in improved service for shippers.

Two basic conditions are placed on a forced line sale:

1. The purchase price must be at least equal to the greater of these two computed values: Going Concern or Net Liquidation. This provision is designed to protect the existing carrier's investment.
2. Potential purchasers must meet these criteria:
    - Financially responsible party capable of assuring continued operations for at least three years
    - Not Class I or Class II carrier
    - Willing and able to pay the purchase price .

No rail lines in North Dakota have been acquired under the feeder railroad program.

[49] These sections paraphrase abandonment procedures outlined in http://www.iowarail.com/pdfs/rail_abandonment_brochure.pdf and http://www.stb.dot.gov/stb/docs/Abandonments%20and%20Alternatives1.pdf

**Table B.1 – North Dakota Rail Line Abandonments Since 1936**

| CASE NO. | COMPANY | LINE | LENGTH | DATE |
|---|---|---|---|---|
| 1045 | MILW | Brampton to Cogswell | 7.50 | 1936 |
| A-193 | GN | Walhalla to CN Border | 5.30 | 1936 |
| A-194 | GN | St. John to CN Border | 3.60 | 1936 |
| ---- | GN | Clifford to Portland | 10.00 | 1962 |
| 1449 | MID-CONT | Clementsville to Edgeley | 48.50 | 1970 |
| 1451 | BN | Maxbass to Dunning | 4.70 | 1972 |
| 1450 | BN | Rutland to Ludden | 30.20 | 1974 |
| IRC 3 | BN | Neche to Canadian Border | 1.00 | 1976 |
| IRC 8 | BN | Blanchard to Mayville | 10.10 | 1976 |
| IRC 23 | BN | Minnewauken to Brinsmade | 7.50 | 1976 |
| IRC 23 (SUB 1) | BN | Brinsmade to Leeds | 9.90 | 1977 |
| IRC 39 | BN | Jamestown to Klose | 5.90 | 1979 |
| IRC 43 | MILW | Fargo to SD Border | 70.40 | 1980 P |
| IRC 50 | MILW | Edgeley to SD Border | 31.50 | 1980 P |
| IRC 56 | MILW | Brampton to SD Border | 4.50 | 1980 P |
| IRC 57 | BN | Ellendale to Forbes | 13.50 | 1980 P |
| IRC 62 | BN | Devils Lake to Warwick | 21.10 | 1980 C |
| IRC 63 | BN | Joliette to Pembina | 12.20 | 1980 P |
| IRC 73 | BN | Fairview Jct. To Great Bend | 8.80 | 1981 P |
| IRC 76 | BN | Binford to McHenry | 11.70 | 1981 C |
| IRC 77 | BN | Newburg to Dunning | 5.60 | 1981 N |
| IRC 82 | MILW | New England to SD Border | 123.80 | 1982 P |

| | | | | |
|---|---|---|---|---|
| IRC 84 | BN | Golva to MT Border | 7.40 | 1981 N |
| IRC 97 | BN | Wolford to Dunseith | 23.40 | 1982 P |
| IRC 100 | BN | Casselton to Amenia | 6.10 | 1982 C |
| IRC 101 | BN | Rolla to St. John | 7.20 | 1982 N |
| IRC 103 | SOO | Wimbledon to Clementsville | 9.30 | 1982 N |
| IRC 105 | BN | Grand Forks to Honeyford | 16.60 | 1983 C |
| IRC 106 | BN | Edgeley to Streeter | 39.40 | 1983 P |
| IRC 109 | BN | Ludden Jct. To Ellendale | 20.10 | 1984 P |
| IRC 110 | BN | Beach to Golva | 12.90 | 1984 N |
| IRC 111 | BN | Truax to Truax Jct. | 6.70 | 1984 N |
| IRC 113 | BN | Regan to Wilton | 11.50 | 1984 N |
| IRC 115 | BN | Loraine to Sherwood | 7.60 | 1984 N |
| IRC 116 | BN | Zeeland to SD Border | 6.00 | 1984 P |
| IRC 117 | SOO | Egeland to Armourdale | 19.60 | 1984 N |
| IRC 119 | BN | Westhope to Antler | 13.00 | 1985 N |
| IRC 120 | BN | Hunter to Blanchard | 10.50 | 1985 C |
| IRC 125 | BN | Zap to Killdeer | 40.90 | 1984 P |
| IRC 128 | BN | Mandan to Mott | 99.40 | 1986 N |
| IRC 132 | SOO | Bismarck to Moffit | 22.10 | 1986 N |
| IRC 135 | SOO | Ashley to SD Border | 16.30 | 1987 N |
| IRC 139 | BN | Fargo to Horace | 8.10 | 1988 N |
| IRC 140 | BN | Rogers to Dazey | 7.70 | 1988 N |
| IRC 143 | BN | Fairview to Watford City | 36.60 | 1992 C |
| IRC 144 | CPR | Drake to Baker | 40.90 | 1991 N |

| | | | | |
|---|---|---|---|---|
| IRC 149 | RRVW | Alice to Lucca | 8.70 | 1992 N |
| IRC 150 | BN | Linton to Zeeland | 29.90 | 1993 N |
| IRC 151 | BN | McCanna to Conway | 16.70 | 1993 N |
| IRC 152 | BN | Towner to Newburg | 35.00 | 1993 N |
| IRC 153 | BN | Glasston to Neche | 19.20 | 1993 N |
| IRC 154 | BN | Mohall to Loraine | 7.40 | 1993 N |
| IRC 157 | CPR | Harlow to Baker | 5.50 | 1995 N |
| IRC 158 | BN | Devils Lake to Hansboro | 65.70 | 1996 N |
| IRC 159 | BN | Hannaford to Binford | 25.10 | 1996 N |
| IRC 163 | RRVW | Maddock to Esmond | 11.90 | 1997 N |
| IRC 164 | Track Tech | Hamar to Warwick | 5.90 | 1997 N |
| IRC 165 | Track Tech | Minot to Tatman (Air Force Base) | 12.70 | 1997 N |
| IRC 166 | RRVW | Oberon to Minnewaukan | 10.6 | 1998N |
| IRC 170 | RRVW | Woodworth to Regan | 59.7 | 1999 N |
| IRC 172 | RRVW | Casselton to Alice | 18.7 | 1999 N |
| IRC 173 | RRVW | Bowdon to Turtle Lake | 56.3 | 2000 N |
| IRC 174 | SOO | Wishek to Ashley | 19.0 | 1999 N |
| IRC 175 | BNSF | Valley City Low Line | 7.9 | 1999 N |
| IRC 178 | MRI/NP | Granville to Lansford | 29.8 | 2001 N |
| IRC 179 | RRVW | Oakes to SD Border | 13.6 | 2001 N |
| IRC 180 | RRVW | Lucca to Marion | 32.9 | 2002 N |
| IRC 182 | BNSF | Tolna to Hamar | 6.0 | 2002 N |
| IRC 183 | BNSF | Powers Lake to Grenora | 60.5 | 2002 N |
| RR-04-165 | BNSF | Langdon to Hannah | 20.93 | 2004 N |

| | | | | |
|---|---|---|---|---|
| RR-04-175 | BNSF | Souris to Westhope | 15.5 | 2004 N |
| RR-04-190 | BNSF | Walum to Dazey | 4.69 | 2004 N |
| RR-04-202 | BNSF | Antelope Valley Station to Zap | 3.36 | 2004 N |
| RR-04-198 | BNSF | Hannah Junction to McCanna | 6.5 | 2004 N |
| RR-04-291 | SOO | Devils Lake to Harlow | 28.35 | 2004 N |
| RR-04-401 | RRVW | Carrington to Bowdon | 27.76 | 2004 N |
| RR-04-625 | BNSF | Sanborn to Rogers | 8.0 | 2005 N |
| RR-05-208 | DMVW | Moffit to Linton | 32.3 | 2005 N |
| RR-05-656 | BNSF | Voss to Grafton | 7.12 | 2005 N |
| **Total** | | | **1,649.81** | |

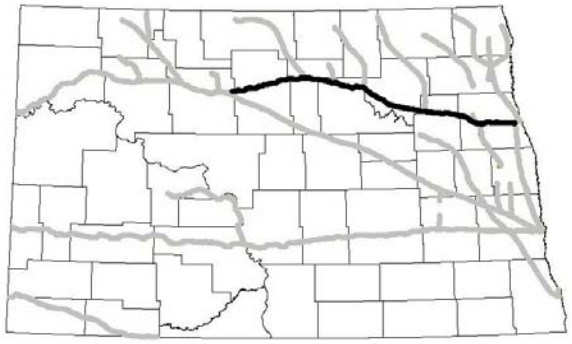
*P* means the NDPSC filed a protest with the ICC. *C* means the NDPSC filed comments with the ICC. *N* means the application was not protested and no comments were filed with the ICC. *Soo Line* is used as the company reference in abandonment petitions including CPR's North Dakota lines prior to 1990. Starting in 1990, *CPR* is used as the company reference.

Source: North Dakota Public Service Commission, 2005

# APPENDIX C:

# DESCRIPTION OF NORTH DAKOTA RAIL LINES

## *Devils Lake Subdivision (BNSF)*
## *Grand Forks Subdivision (BNSF):*



### Grand Forks-Surrey
### (BN012, BN022, & BN028)

The BNSF Devils Lake Subdivision consists of the mainline track between Grand Forks and Surrey. The subdivision begins at **milepost** 0.4 in Grand Forks, at the Devils Lake Switch, and runs west from there 195.9 miles to the Surrey station. The Devils Lake subdivision connects to the BNSF KO Subdivision main line at Surrey

The Grand Forks-Surrey mainline connects to the KO Subdivision main line at Surrey. The traffic density over the line is between 5 and 9.99 million gross ton-miles per mile. The maximum speed on the Devils Lake Subdivision line is 50 miles per hour and the maximum carload is 143 tons. Detailed information about this segment is given in Table C.1.

**Table C.1 Grand Forks-Surrey Line**

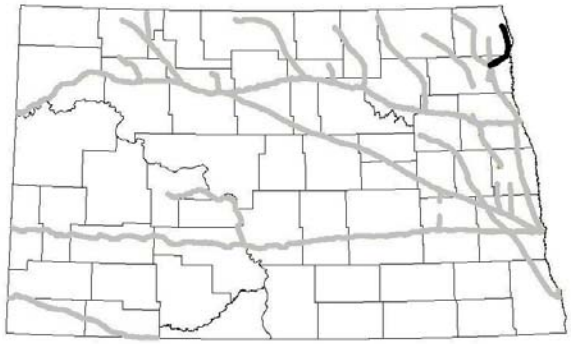
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 0.0 | 196.3 | 50 mph | 143 tons | 5-9.99 |

Grain movements generated on the Grand Forks-Surrey line in 2004 were 18.6 million bushels, which is 10.5% higher than the three year average from 2002 to 2004 of 16.8 million bushels. This resulted in 4,878 carloads of grain generated in 2004. Detailed information about grain movements generated on the Grand Forks-Surrey line is given in Table C.2.

**Table C.2 Grain Movements Generated on the BNSF Grand Forks-Surrey Line**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 16,810,912 | 18,579,158 |
| **Tons** | 489,691 | 544,345 |
| **Cars** | 4,388 | 4,878 |
| **Cars Per Mile** | 22 | 25 |

## *Drayton Subdivision (BNSF):*



### Grafton-Joliette Line (BN033)

The Grafton-Joliette Line is the BNSF Drayton Subdivision in northeastern North Dakota. The Grafton-Joliette line runs 33.8 miles northeast of the Grafton station.

The Drayton Subdivision has a maximum speed of 25 mph and a maximum carload of 134 tons. Due to confidentiality reasons, the grain movement generation reported includes the Glasston and Walhalla Subdivisions. In 2004, 356,950 tons of grain was generated over the Drayton, Glasston, and Walhalla Subdivisions which is 18.4% greater than the three year average from 2002 to 2004 of 301,259.

**Table C.3 Grafton-Joliette Line**

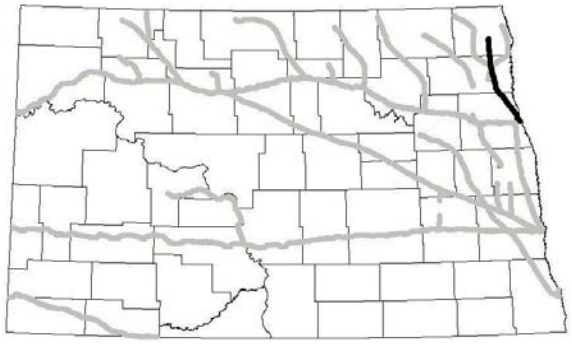
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04)* | Tons Generated (2004)* |
|---|---|---|---|---|---|
| 145.0 | 178.8 | 25 mph | 134 tons | 301,259 | 356,950 |

In 2004, 11.9 million bushels were generated on the Drayton, Glasston, and Walhalla Subdivisions, which is 1.8 million greater than the three year average of 10.1 million bushels. This resulted in 2,978 carloads generated in 2004. Detailed information about the grain movements generated over the Drayton, Glasston, and Walhalla Subdivisions is given in Table C.4.

**Table C.4 Grain Movements Generated on the BNSF Drayton, Glasston, and Walhalla Subdivisions**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 10,112,343 | 11,905,616 |
| **Tons** | 301,260 | 356,950 |
| **Cars** | 2,699 | 2,978 |
| **Cars Per Mile** | 19 | 21 |

## *Glasston Subdivision (BNSF):*



### Grand Forks-Glasston Line (BN033)

The Grand Forks-Glasston Line is the BNSF Glasston Subdivision in northeast North Dakota. This branch line connects to the Grand Forks Subdivision of the main line at Grand Forks and runs 59.6 miles north and west to the Glasston Station.

The Glasston Subdivision has a maximum speed of 25 mph and a maximum carload of 143 tons. Due to confidentiality reasons, the grain movement generation reported includes the Drayton and Walhalla Subdivisions. In 2004, 356,950 tons of grain was generated over the Drayton, Glasston, and Walhalla Subdivisions which is 18.4% greater than the three year average from 2002 to 2004 of 301,259.

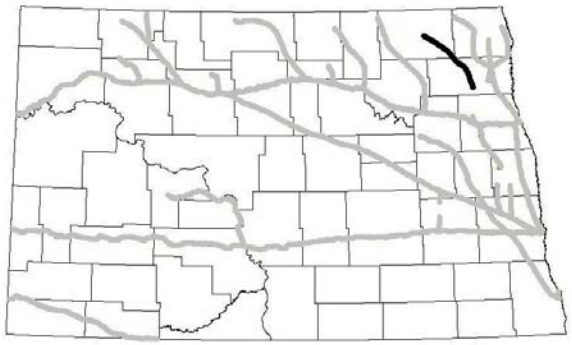
**Table C.5 Grand Forks-Glasston Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04)* | Tons Generated (2004)* |
|---|---|---|---|---|---|
| 145.0 | 178.8 | 25 mph | 143 tons | 301,260 | 356,950 |

In 2004, 11.9 million bushels were generated on the Drayton, Glasston, and Walhalla Subdivisions, which is 1.8 million greater than the three year average of 10.1 million bushels. This resulted in 2,978 carloads generated in 2004. Detailed information about the grain movements generated over the Drayton, Glasston, and Walhalla Subdivisions is given in Table C.4.

The portion of the Glasston Subdivision between Grafton and Glasston was leased to the Dakota Northern Railroad on February 5, 2006. As the line was in operation by BNSF in 2004, the above data reflect commodity movements under BNSF.

## *Hannah Subdivision (BNSF):*



### Conway-Langdon Line (BN027)

The Conway-Langdon line is the BNSF Hannah Subdivision in northeastern North Dakota. The Conway station is located southwest of Grafton. The line connects a section of rail on which BNSF and Northern Plains Railroad have joint trackage rights. The line connects to the BNSF Glasston Subdivision at Ardoch via the NPR Devils Lake Subdivision. From Conway, the Conway-Langdon line runs northwest 50 miles to the Langdon station.

The Hannah Subdivision has a maximum speed of 25 mph and a maximum carload of 143 tons. In 2004 369,389 tons of grain was generated on the Conway-Langdon line which is slightly greater than the three year average of 359,874. Detailed information about the Conway-Langdon line is given in Table C.6.

**Table C.6 Conway-Langdon Line**

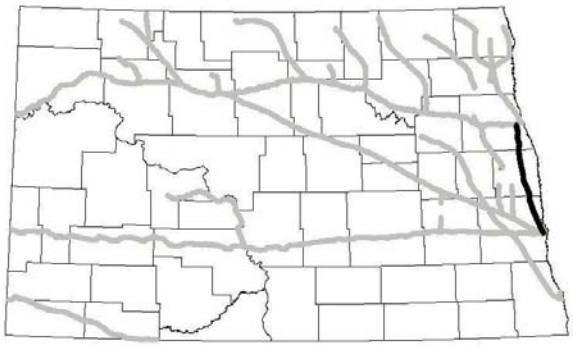
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 23.6 | 73.6 | 25 mph | 143 tons | 359,874 | 369,389 |

In 2004, 12.5 million bushels were generated on the Conway-Langdon line, which is less than 3% greater than the three year average from 2002 to 2004 of 12.2 million bushels. This resulted in 3,309 carloads generated in 2004. Detailed information about the grain movements generated over the Conway-Langdon line is given in Table C.7.

**Table C.7 Grain Movements Generated on the BNSF Conway-Langdon Line**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 12,246,609 | 12,588,891 |
| **Tons** | 359,874 | 369,389 |
| **Cars** | 3,224 | 3,309 |
| **Cars Per Mile** | 64 | 66 |

## *Hillsboro Subdivision (BNSF):*



### Fargo-Grand Forks Line (BN030)

The Fargo-Grand Forks line is the BNSF Hillsboro Subdivision in east central North Dakota. The Fargo-Grand Forks line runs north 74 miles from Fargo to the Grand Forks station. The Hillsboro Subdivision connects to the Devils Lake Subdivision at the DL Switch in Grand Forks.

The Fargo-Grand Forks main line connects to the KO main line at Fargo, and the Devils Lake main line at the DL Switch in Grand Forks. The traffic density over the line is between 10 and 19.99 million gross ton-miles per mile. The maximum speed on the Fargo-Grand Forks line is 50 miles per hour and the maximum carload is 143 tons. Detailed information about this segment is given in Table C.8.

**Table C.8 Grand Forks-Surrey Line**

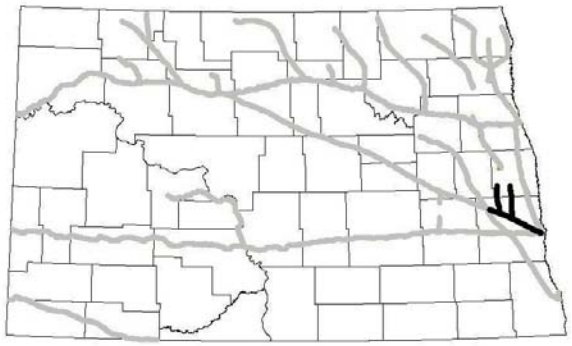
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 24.2 | 98.2 | 50 mph | 143 tons | 10-19.9 |

Grain movements generated on the Fargo-Grand Forks line in 2004 were 24.5 million bushels, which is 10.6% lower than the three year average from 2002 to 2004 of 27.4 million bushels. This resulted in 6,310 carloads of grain generated in 2004. Detailed information about grain movements generated on the Fargo-Grand Forks line is given in Table C.9.

**Table C.9 Grain Movements Generated on the BNSF Grand Forks-Surrey Line**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 27,417,411 | 24,488,948 |
| **Tons** | 794,730 | 704,270 |
| **Cars** | 7,121 | 6,310 |
| **Cars Per Mile** | 96 | 85 |

## *Hunter, Clifford, & Prosper Subdivisions (BNSF):*



**Vance-Hunter Line (BN050)**
**Erie Junction-Clifford Line (BN050)**
**Fargo-Nolan Line (BN050)**

The Hunter, Clifford, and Prosper Subdivisions are grouped together due to the similar operating characteristics and the limited number of stations present in each Subdivision. The Hunter, Clifford, and Prosper Subdivisions include two short branch lines and one low-volume main line.

The first, Vance-Hunter Line is the BNSF Hunter Subdivision in eastern North Dakota. The Vance station is located 23 miles west of Fargo on the Prosper Subdivision of the BNSF main line. The Vance-Hunter Line connects to the Prosper line and runs north 11.4 miles to the Hunter station. Detailed information about the Vance-Hunter Line is given in Table C.10.

**Table C.10 Vance-Hunter Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04)* | Tons Generated (2004)* |
|---|---|---|---|---|---|
| 64.2 | 75.2 | 10 mph | 134 tons | 170,004 | 100,474 |

The Erie Junction-Clifford line is part of the BNSF Clifford Subdivision in eastern North Dakota. The Erie Junction is located 33 miles west of Fargo on the Prosper Subdivision of the BNSF main line. The Erie Junction-Clifford line connects to the Prosper line and runs north 17.5 miles to the Clifford station. Detailed information about the Erie Junction-Clifford line is given in Table C.11.

**Table C.11 Erie Junction-Clifford Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04)* | Tons Generated (2004)* |
|---|---|---|---|---|---|
| 0.0 | 17.5 | 25 mph | 134 tons | 170,004 | 100,474 |

# BNSF Railway (BNSF)

The Fargo-Nolan line is known as the Prosper subdivision of the BNSF main line in eastern North Dakota. The Fargo-Nolan line runs 41.0 miles northwest from Fargo to the Nolan station. The Fargo-Nolan Line connects to the BNSF KO Subdivision main line at Nolan. The Prosper Subdivision also connects to the Clifford and Hunter branch line Subdivisions at Erie Junction and Vance respectively. Detailed information about the Fargo-Nolan line is given in Table C.12.

**Table C.12 Fargo-Nolan Line**

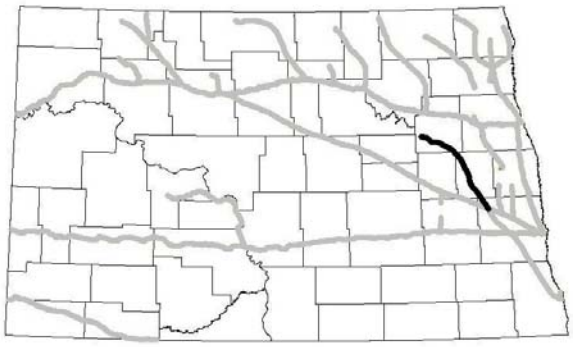
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 0.0 | 41.0 | 49 mph | 143 tons | 0-0.99 |

Due to confidentiality reasons, the grain movements generated are not reported for the individual subdivisions. In 2004, 3.6 million bushels of grain were generated on the Hunter, Clifford, and Prosper Subdivisions. This is nearly 40% lower than the three year average of 5.9 million bushels. In 2004, 900 carloads of grain were generated over these three subdivisions. Detailed information about the grain movements on the Hunter, Clifford, and Prosper Subdivisions is given in Table C.12.

**Table C.13 Grain Movements Generated on the BNSF Hunter, Clifford, and Prosper Subdivisions**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 5,977,096 | 3,617,210 |
| **Tons** | 170,004 | 100,474 |
| **Cars** | 1,523 | 900 |
| **Cars Per Mile** | 22 | 13 |

## *Warwick Subdivision (BNSF):*



### Warwick Junction-Tolna Line (BN059)

The Warwick Junction-Tolna Line is the BNSF Warwick Subdivision. The Warwick Junction is located at Nolan which is 49.9 miles west of the Dilworth, MN station on the KO Subdivision of the BNSF main line. The Warwick Junction-Tolna line connects to the KO Subdivision of the BNSF main line and runs northwest 66.6 miles to the Tolna station.

The Warwick Subdivision has a maximum speed of 25 miles per hour and a maximum carload of 134 tons. In 2004, 373,587 tons of grain was generated on the Warwick Junction-Tolna line, which is slightly less than the three year average from 2002 to 2004 of 375,346 tons. Detailed information about the Warwick Junction-Tolna line is given in Table C.14.

**Table C.14 Warwick Junction-Tolna Line**

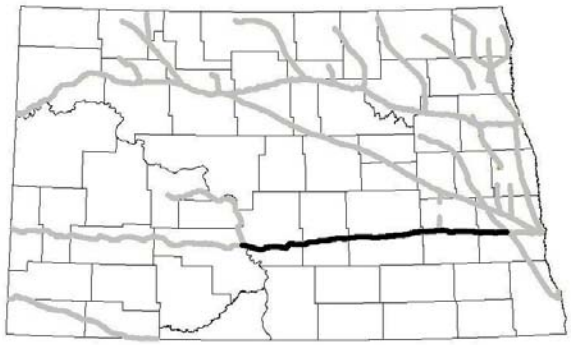
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 24.3 | 90.9 | 25 mph | 134 tons | 375,346 | 373,587 |

In 2004, 12.8 million bushels were generated on the Warwick Subdivision, which is roughly 100,000 less than the three year average of 12.9 million bushels. This resulted in 3,347 carloads generated in 2004. Detailed information about the grain movements generated over the Warwick Subdivision is given in Table C.15.

**Table C.15 Grain Movements Generated on the BNSF Warwick Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 12,921,711 | 12,827,765 |
| **Tons** | 375,346 | 373,587 |
| **Cars** | 3,363 | 3,347 |
| **Cars Per Mile** | 50 | 50 |

## *Jamestown Subdivision (BNSF):*



### Surrey Junction-Mandan Line (BN064 & BN076)

The Surrey Junction-Mandan Line is the BNSF Jamestown subdivision in southern North Dakota. The Surrey Junction is located 31.2 miles west of Fargo on the KO Subdivision of the BNSF main line. The Surrey Junction-Mandan Line connects to the KO Subdivision of the BNSF main line and runs west 169.1 miles to the Mandan station.

The Surrey Junction-Mandan line is part of the BNSF mainline which extends across southern North Dakota. The traffic density over the entire BNSF mainline in is greater than 40 million gross ton-miles per mile. The maximum speed on the Surrey Junction-Mandan line is 60 miles per hour and the maximum carload is 143 tons. Detailed information about this segment is given in Table C.16.

**Table C.16 Surrey Junction-Mandan Mainline**

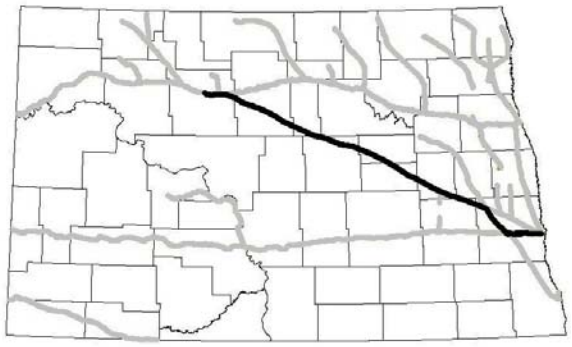
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 31.2 | 200.3 | 60 mph | 143 tons | > 40 |

Grain movements generated on the Surrey Junction-Mandan line in 2004 were 23.8 million bushels which is slightly less than the three year average from 2002 to 2004 of 24.3 million. This resulted in 6.332 carloads of grain generated in 2004 on the Jamestown Subdivision. Detailed information about grain movements on the Surrey Junction-Mandan line is given in Table C.17.

**Table C.17 Grain Movements Generated on the BNSF Jamestown Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 24,377,423 | 23,862,720 |
| **Tons** | 723,304 | 706,673 |
| **Cars** | 6,481 | 6,332 |
| **Cars Per Mile** | 38 | 37 |

## *KO Subdivision (BNSF):*



### Fargo -Minot
### (BN0036, BN076, BN0061, & BN059)

The BNSF Fargo-Minot main line is the KO Subdivision, extending from eastern to north central North Dakota. The Fargo-Minot line extends from the Fargo station on the North Dakota-Minnesota border northwest 203.2 miles to the Minot station. The KO Subdivision connects to the Jamestown Subdivision mainline at the Surrey Junction, and to the Devils Lake Subdivision mainline at the Surrey station..

The traffic density over the entire BNSF KO-Glasgow main line in North Dakota is greater than 40 million gross ton miles per mile. The maximum speed on the Fargo-Minot line is 60 miles per hour and the maximum carload is 143 tons. Detailed information about this segment is given in Table C.18.

**Table C.18 Fargo-Minot Line**

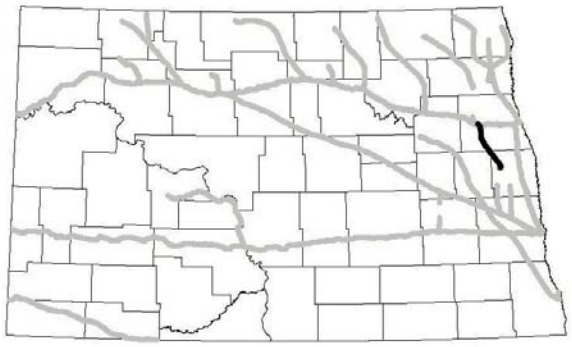
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 0 | 203.2 | 60 mph | 143 tons | > 40 |

Grain movements generated on the Fargo-Minot line in 2004 were 15.9 million bushels, which is over 11.6% less than the three year average form 2002 to 2004 of 18 million bushels. This resulted in 3,906 carloads of grain generated in 2004. Detailed information about grain movements is given in Table C.19.

**Table C.19 Grain Movements Generated on the BNSF KO Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 18,055,988 | 15,950,381 |
| **Tons** | 494,447 | 435,893 |
| **Cars** | 4,431 | 3,906 |
| **Cars Per Mile** | 22 | 19 |

## *Mayville Subdivision (BNSF):*



### Mayville Junction-Mayville (BN073)

The Mayville Junction-Mayville line is known as the BNSF Mayville Subdivision in eastern North Dakota. The Mayville Junction is located 0.6 miles east of Larimore on the Devils Lake Subdivision of the BNSF main line. The Mayville Junction-Mayville line connects to the main line and runs south 33.6 miles to the Mayville station.

The Mayville Junction-Mayville line has a maximum speed of 25 miles per hour and a maximum carload of 134 tons. In 2004, 199,691 tons of grain was generated over the Mayville Subdivision, which is 5% less than the three year average of 211,369. Detailed information about the Mayville Junction-Mayville line is given in Table C.20.

**Table C.20 Mayville Junction-Mayville Line**

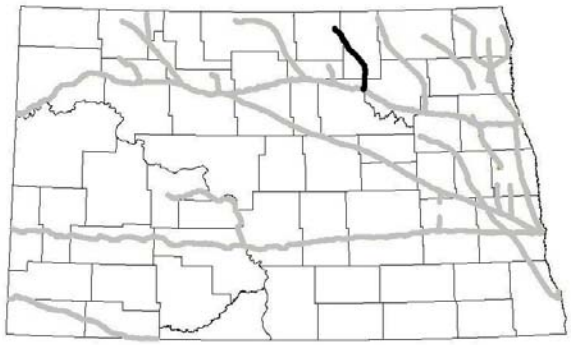
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 129.6 | 97.5 | 25 mph | 143 tons | 211,369 | 199,691 |

In 2004, 6.7 million bushels were generated on the Mayville Subdivision, which is 389,000 million less than the three year average of 7.1 million bushels. This resulted in 1,789 carloads generated in 2004. Detailed information about the grain movements generated over the Mayville Junction-Mayville line is given in Table C.21.

**Table C.21 Grain Movements Generated on the BNSF Mayville Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 7,112,171 | 6,723,276 |
| **Tons** | 211,369 | 199,691 |
| **Cars** | 1,893 | 1,789 |
| **Cars Per Mile** | 56 | 53 |

## *Rolla Subdivision (BNSF):*



### Churchs Ferry-Rolla Line (BN021)

The Churchs Ferry-Rolla line is the BNSF Rolla Subdivision in north central North Dakota. The Churchs Ferry station is located 19 miles west of Devils Lake on the Devils Lake Subdivision of the BNSF main line. The Churchs Ferry-Rolla line connects to the Devils Lake Subdivision and runs northwest 47.4 miles to the Rolla station.

The Churchs Ferry-Rolla line has a maximum speed of 25 miles per hour and a maximum carload of 134 tons. In 2004, 54,455 tons of grain was generated over the Rolla Subdivision which is 30% less than the three year average from 2002 to 2004 of 77,321 tons. Detailed information about the Churchs Ferry-Rolla Line is given in Table C.22.

**Table C.22 Churchs Ferry-Rolla Line**

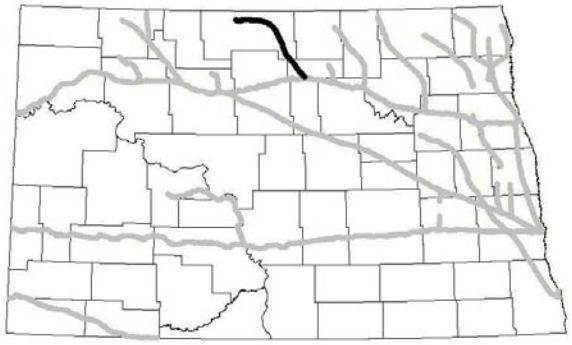
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 0.0 | 47.3 | 25 mph | 143 tons | 77,321 | 54,455 |

In 2004, 1.9 million bushels were generated on the Rolla Subdivision, which is 800,000 less than the three year average of 2.7 million bushels. This resulted in 488 carloads in 2004. Detailed information about the grain movements generated on the Churchs Ferry-Rolla line is given in Table C.23.

**Table C.23 Grain Movements Generated on the BNSF Drayton, Glasston, and Walhalla Subdivisions**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 2,725,569 | 1,926,170 |
| **Tons** | 77,321 | 54,455 |
| **Cars** | 693 | 488 |
| **Cars Per Mile** | 15 | 10 |

## *Westhope Subdivision (BNSF):*



### Rugby-Souris Line (BN011)

The Rugby-Souris line is commonly known as the BNSF Westhope Subdivision in north central North Dakota. The segment from Souris to Westhope has been abandoned and the line presently ends just west of Souris. The line begins at the Rugby station, located 60.5 miles east of Minot on the BNSF main line (Devils Lake Subdivision) and runs northwest 51 miles to Souris.

The Rugby-Souris line has a maximum speed of 25 mph and a maximum carload of 143 tons between Rugby and Bottineau, and 134 tons between Bottineau and Souris. In 2004, 137,596 tons of grain was generated over the Westhope Subdivision, which is 8% below the three year average of 149,127 tons. Detailed information about the line is given in Table C.24.

**Table C.24 Rugby-Westhope Line**

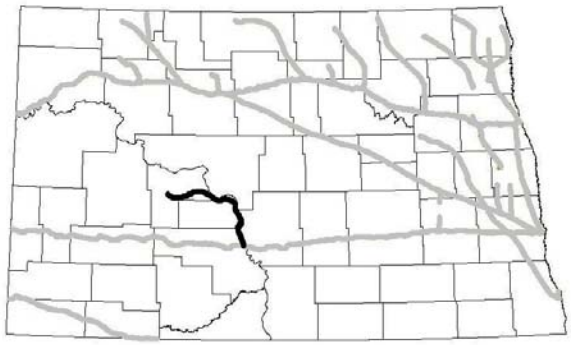
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 0.0 | 51.0 | 25-30 mph | 134-143 tons | 149,127 | 137,596 |

In 2004, 4.97 million bushels were generated over the Westhope Subdivision, which is roughly a half million less than the three year average from 2002 to 2004 of 5.44 million bushels. Detailed information about the grain movements generated over the line is given in Table C.25.

**Table C.25 Grain Movements Generated on the BNSF Westhope Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 5,441,830 | 4,973,253 |
| **Tons** | 149,127 | 137,596 |
| **Cars** | 1,336 | 1,232 |
| **Cars Per Mile** | 26 | 24 |

## *Zap Subdivision (BNSF):*



### Mandan-Zap Line (BN101)

The Mandan-Zap line is commonly known as the Zap Subdivision of the BNSF in central North Dakota. The Mandan station is located on the western end of the Jamestown Subdivision of the BNSF main line. The Mandan-Zap line connects to the main line at Mandan, and runs northwest 80.5 miles to the Zap station.

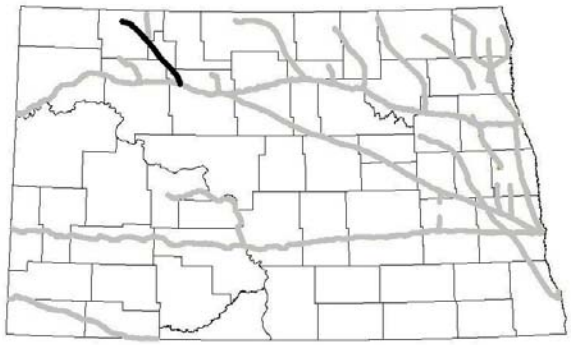
The Mandan-Zap line has a maximum speed of 25 miles per hour and a maximum carload of 143 tons. The traffic density on the Mandan-Zap line is between 1 and 4.99 from Mandan to Stanton, and between 5 and 9.99 from Stanton to Zap. The increased density between Stanton and Zap is due to shipments from coal mines in the area to the Antelope Valley and Coyote power plants and to the Great Plains Synfuels Plant all near Beulah on the western end of the Mandan-Zap line.

Due to confidentiality reasons, and the low volume of grain movement over the Zap Subdivision, grain movement data is not reported. Detailed information about the Mandan-Zap line is given in Table C.26.

**Table C.26 Mandan-Zap Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 0.0 | 80.5 | 25 mph | 143 tons |

## *Crosby Subdivision (BNSF):*



### Berthold-Crosby Line (BN007)

The Berthold-Crosby branch line is known as the Crosby Subdivision of the BNSF in North Dakota. The Berthold station is located 23 miles west of Minot on the Glasgow Subdivision of the main line. The Berthold-Crosby line connects to the Glasgow line and runs northwest 85.9 miles to the Crosby station. Currently, the last 31.5 miles from Lignite Junction to Crosby is listed as out of service trackage.

The Berthold-Crosby line has a maximum speed of 25 miles per hour and a maximum carload of 143 tons. In 2004, 117,064 tons of grain was generated over the Berthold-Crosby line, which is 21% greater than the three year average from 2002 to 2004 of 96,306 tons. Detailed information about the Berthold-Crosby line is given in Table C.27.

**Table C.27 Berthold-Crosby Line**

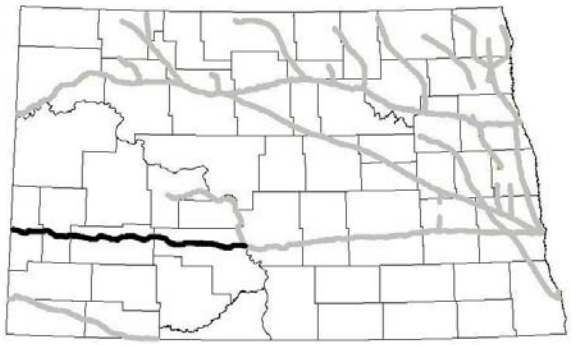
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 0.0 | 88.5 | 25 mph | 143 tons | 96,306 | 117,064 |

In 2004, 5.97 million bushels were generated on the Crosby Subdivision, which is 1.3 million greater than the three year average of 4.67 million bushels. In 2004, 1,048 grain carloads were generated. Detailed information about the grain movements generated on the Crosby Subdivision is given in Table C.28.

**Table C.28 Grain Movements Generated on the BNSF Crosby Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 4,666,227 | 5,977,005 |
| **Tons** | 96,306 | 117,064 |
| **Cars** | 863 | 1,048 |
| **Cars Per Mile** | 15 | 18 |

## *Dickinson Subdivision (BNSF):*



### Mandan-Beach Line (BN058)

The Mandan-Beach main line is the BNSF Dickinson Subdivision in North Dakota extending from Mandan in south central North Dakota 174.2 miles west to Beach on the Montana/North Dakota Border. The Mandan-Beach line is a continuation of the Jamestown Subdivision of the BNSF main line in eastern North Dakota.

The traffic density over the entire BNSF Dickinson and Jamestown main line in North Dakota is greater than 40 million gross ton miles per mile. The maximum speed on the Mandan-Beach line is 60 miles per hour and the maximum carload is 143 tons. Detailed information about this segment is given in Table C.29.

**Table C.29 Mandan-Beach Line**

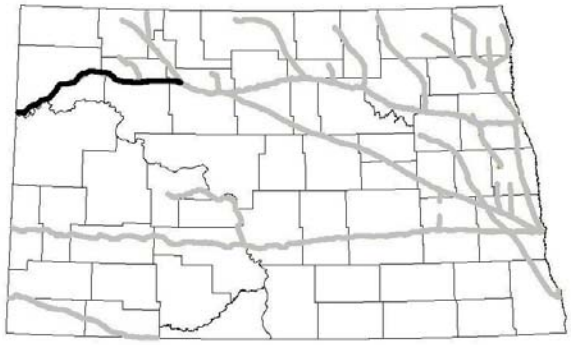
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 0 | 203.2 | 60 mph | 143 tons | > 40 |

Grain movements generated on the Mandan-Beach line in 2004 were 24.1 million bushels, which is more than 23% greater than the three year average form 2002 to 2004 of 19.6 million bushels. This resulted in 6,471 carloads of grain generated in 2004. Detailed information about grain movements on the Dickinson Subdivision is given in Table C.30.

**Table C.30 Grain Movements Generated on the BNSF Dickinson Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 19,628,136 | 24,115,638 |
| **Tons** | 589,754 | 722,241 |
| **Cars** | 5,284 | 6,471 |
| **Cars Per Mile** | 30 | 37 |

## *Glasgow Subdivision (BNSF):*



### Minot-Williston Line (BN002 & BN008)

The Minot-Williston main line in northwestern North Dakota is commonly referred to as the Glasgow Subdivision. It extends 133.2 miles from Minot to the Montana border, where it crosses near Trenton.

The traffic density over the entire BNSF Glasgow and KO main line in North Dakota is greater than 40 million gross ton miles per mile. The maximum speed on the Minot-Williston line is 60 miles per hour and the maximum carload is 143 tons. Detailed information about this segment is given in Table C.31.

**Table C.31 Minot-Williston Line**

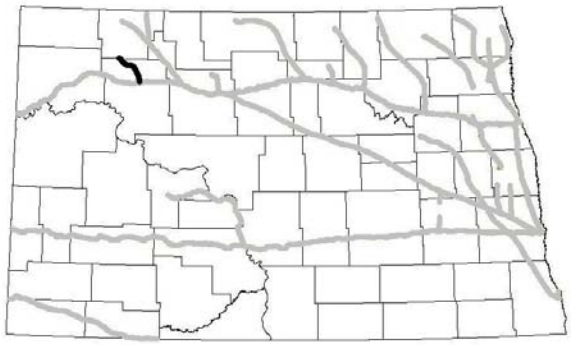
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 0.0 | 133.2 | 60 mph | 143 tons | > 40 |

Detailed information about grain movements on the BNSF Glasgow Subdivision is given in Table C.32.

**Table C.32 Grain Movements Generated on the BNSF Glasgow Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 18,334,653 | 18,550,716 |
| **Tons** | 530,703 | 541,106 |
| **Cars** | 4,755 | 4,848 |
| **Cars Per Mile** | 36 | 36 |

## *Grenora Subdivision (BNSF):*



### Stanley-Powers Lake Line (BN001)

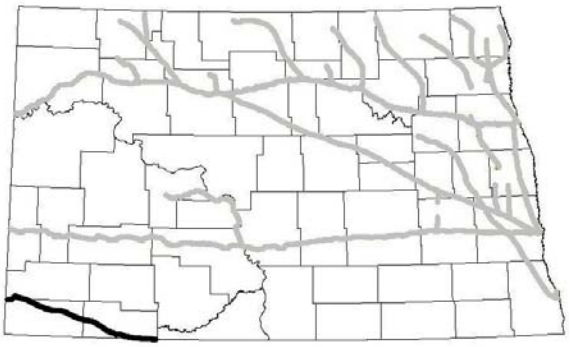
The Stanley-Powers Lake line is commonly known as the Grenora Subdivision of the Minot Division of the BNSF in North Dakota. The Stanley station is located 54 miles west of Minot on the Glasgow Subdivision of the main line. The Stanley-Powers Lake line connects to the Glasgow line an runs northwest 24.6 miles to the Powers Lake station.

Due to confidentiality reasons, and the low volume of grain movement over the Grenora Subdivision, grain movement data is not reported. Detailed information about the Stanley-Powers Lake line is given in Table C.33.

**Table C.33 Stanley-Powers Lake Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 0.0 | 24.6 | 25 mph | 143 tons |

## *Hettinger Subdivision (BNSF):*



### Hettinger-Baker Line (BN078)

The Hettinger-Baker line is commonly known as the Hettinger Subdivision of the BNSF in North Dakota. The Hettinger station is located at the west end of the Mobridge Subdivision of the BNSF in South Dakota. The Hettinger-Baker line connects to the Mobridge Subdivision and runs west northwest 89.6 miles to the Baker, Montana station in eastern Montana.

The traffic density over the entire BNSF Hettinger main line in North Dakota is between 10 and 19.99 million gross ton miles per mile. The maximum speed on the Minot-Williston line is 60 miles per hour and the maximum carload is 143 tons. Detailed information about this segment is given in Table C.34.

**Table C.34 Hettinger-Baker, Montana Line**

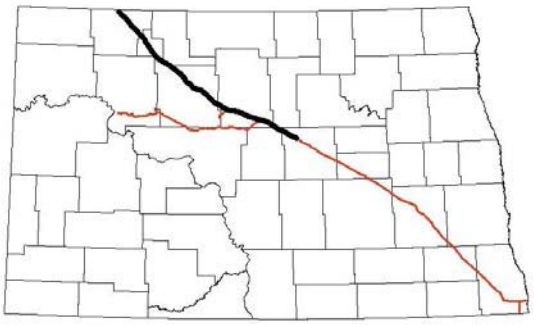
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 926.0 | 1015.6 | 40 mph | 143 tons | 10 – 19.99 |

In 2004, 11.1 million bushels were generated on the Hettinger-Baker line, which is 1.9 million greater than the three year average of 9.1 million bushels. This resulted in 2,981 carloads generated in 2004. Detailed information about the grain movements generated over the Hettinger Subdivision is given in Table C.35.

**Table C.35 Grain Movements Generated on the BNSF Hettinger Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 9,116,802 | 11,100,588 |
| **Tons** | 273,231 | 332,651 |
| **Cars** | 2,448 | 2,981 |
| **Cars Per Mile** | 27 | 33 |

## *Portal Subdivision (CPR):*



### Harvey-Portal Line (CPR130 and CPR137)

The Harvey-Portal line is the CPR Portal Subdivision in west-central North Dakota. The Harvey station is located 72.2 miles southeast of Minot. The Harvey-Portal line runs 152.5 miles from Harvey in central North Dakota to Portal which is located at the Canadian Border.

The Harvey-Portal line is part of the CPR main line that runs diagonally across the state of North Dakota. The traffic density over the main line is between 10 and 19.99 million gross ton-miles per mile. The maximum speed on the Harvey-Portal line is 49 mph and the maximum carload is 143 tons. Detailed information about this segment is given in Table C.36.

**Table C.36 Harvey-Portal Line**

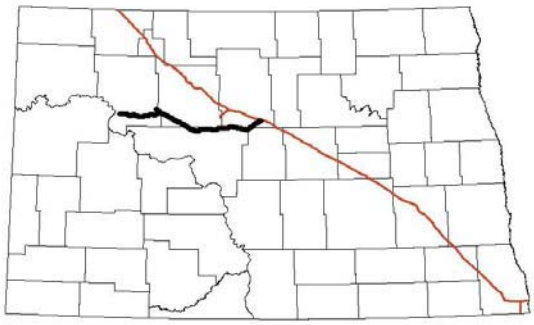
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 396.5 | 549.0 | 30-49 mph | 143 tons | 10-19.99 |

Grain movements over the Harvey-Portal line are listed in Table C.37. In 2004 over 22 million bushels were generated on the Harvey-Portal line which is slightly greater than the three year average of 21.57 million bushels. Detailed information about the grain movements over the Portal Subdivision is given in Table C.37

**Table C.37 Grain Movements Generated on the CPR Portal Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 21,574,214 | 22,150,780 |
| **Tons** | 595,857 | 625,832 |
| **Cars** | 5,339 | 5,607 |
| **Cars Per Mile** | 35 | 37 |

## *Newtown Subdivision (CPR):*



**Drake-Max Line (CPR133)**
**Max-Newtown Line (CPR131)**
**Prairie Jct.-Plaza Line (CPR131)**

The Drake-Max line is part of the CPR Newtown Subdivision in west-central North Dakota. The Drake station is located 49.2 miles southeast of Minot on the Portal Subdivision of the CPR main line. The Drake-Max branch line connects to the Portal line and runs 48.2 miles west to the Max station.

The Max station is located at the western end of the Missouri River Subdivision, 48.2 miles west of Drake. The line continues from the west end of the Missouri River line, 62.7 miles northwest of the Newtown station. The Prairie Junction station is located 31.1 miles west of Max and extends 3.8 miles north to the Plaza station. The total length of the Newtown Subdivision is 114.7 miles.

The Newtown subdivision has a maximum speed of 25 mph and a maximum carload of 143 tons. In 2004, 332,329 tons of grain was generated on the subdivision, which is slightly greater than the three-year average of 310,150 tons. Detailed information about the Newtown Subdivision is given in Table C.38.

**Table C.38 Newtown Subdivision**

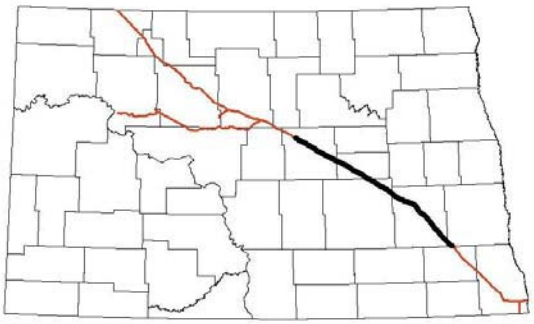
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 418.5 | 529.4 | 25 mph | 143 tons | 310,150 | 332,329 |

In 2004, 11.67 million bushels were generated on the Newtown Subdivision, which is 1 million greater than the three year average from 2002-2004. This resulted in 2,978 carloads of grain shipped in 2004.

**Table C.39 Grain Movement Generated on CPR Newtown Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 10,739,359 | 11,672,001 |
| **Tons** | 310,150 | 332,329 |
| **Cars** | 2,779 | 2,978 |
| **Cars Per Mile** | 25 | 27 |

## *Carrington Subdivision (CPR):*



### Enderlin-Harvey Line (CPR136 & CPR138)

The Enderlin-Harvey Line is the CPR Carrington Subdivision in east-central North Dakota. The Enderlin station is located 30 miles southeast of Valley City. The Enderlin-Harvey line runs 112.2 miles from Enderlin in southeast North Dakota to Harvey in the central portion of the state.

The Enderlin-Harvey Line is part of the CPR mainline which extends diagonally across the state of North Dakota. The traffic density over the entire CPR mainline in North Dakota is between 10 and 19.99 million gross ton-miles per mile. The maximum speed on the Enderlin-Harvey Line is 49 mph and the maximum carload is 143 tons. Detailed information about this segment is given in Table C.40.

**Table C.40 Enderlin-Harvey Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 257.3 | 396.5 | 49 mph | 143 tons | 10-19.99 |

Grain movements generated on the Enderlin-Harvey line in 2004 were 22.3 million bushels, which is over 14% greater than the three year average form 2002 to 2004 of 19.5 million bushels. This resulted in 5,795 carloads of grain generated in 2004. Detailed information about grain movements on the Carrington Subdivision is given in Table C.40.

**Table C.40 Grain Movements Generated on CPR Carrington Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 19,513,144 | 22,276,916 |
| **Tons** | 570,831 | 646,774 |
| **Cars** | 5,114 | 5,795 |
| **Cars Per Mile** | 46 | 52 |

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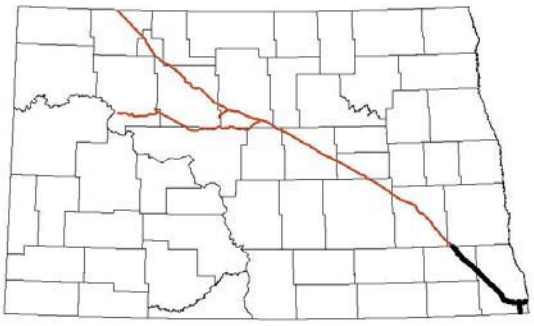
## *Elbow Lake Subdivision & Veblen Subdivision (CPR):*



### Fairmount-Enderlin Line (CPR138)

The Fairmount-Enderlin Line is located in the CPR Elbow Lake Subdivision of the CPR main line in south-eastern North Dakota. The Fairmount station is located 1.2 miles west of the Minnesota border. The Fairmount-Enderlin Line runs 67 miles northwest from Fairmount to Enderlin.

**Table C.41 Fairmount-Enderlin Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Traffic Density (Million Gross Ton Miles/Mile) |
|---|---|---|---|---|
| 190.3 | 257.3 | 49 mph | 143 tons | 10-19.99 |

### Veblen Jct-South Dakota Line (CPR138)

The Veblen Junction-South Dakota Line is the CPR Veblen Subdivision in southeast North Dakota. Veblen Junction is located 10 miles east of Hankinson on the Elbow Lake Subdivision of the main line. The Veblen Junction line connects to the Elbow Lake line and runs south 8.9 miles to the South Dakota border.

**Table C.42 Veblen Junction-South Dakota Line**

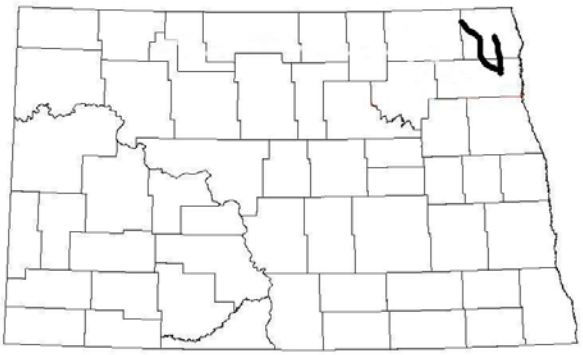
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 191.4 | 210.0 | 25 mph | 143 tons |

**Table C.43 Grain Movement Generated on CPR Elbow Lake and Veblen Subdivisions**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 12,506,345 | 17,888,637 |
| **Tons** | 364,028 | 522,220 |
| **Cars** | 3,262 | 4,679 |
| **Cars Per Mile** | 43 | 61 |

# Dakota Northern Railroad (DNRR)

## *Wallhalla and Glasston Lines:*



DNRR began operation February 5, 2006 on the Grafton to Glasston and Grafton to Walhalla lines, leased from BNSF. DNRR has interchange capability with BNSF at Grafton. This branch line connects to the Glasston Subdivision of the BNSF branch line at Grafton.

The Grafton-Glasston and Grafton-Walhalla lines have a maximum speed of 25 mph and a maximum carload of 143 tons.

**Table C.44 Grafton-Glasston Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 39.4 | 59.6 | 25 mph | 134 tons |

**Table C.45 Grafton-Walhalla Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 0.0 | 47.9 | 25 mph | 134 tons |

DNRR began operation February 5, 2006 and has no movement history.

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## *Dakota Subdivision (DMVW):*

### Wishek-Hankinson Line (DM151 & DM145)

The Wishek-Hankinson line is commonly referred to as the Dakota Subdivision of the DMVW in southeastern North Dakota. The line connects to the RRVW Third Subdivision at Oakes and the CPR Elbow Lake Subdivision of the main line at Hankinson. From the Wishek station in southern North Dakota, the Wishek-Hankinson line runs 135.4 miles east to the Hankinson station.

The Dakota Subdivision has a maximum speed of 10 mph and a maximum carload of 143 tons. However, between the Fullerton and Wishek stations, the maximum carload is restricted to 134 tons. In 2004, 914,681 tons of grain was generated on the Wishek-Hankinson line which is 7% greater than the three-year average from 2002 to 2004 of 850,901. Detailed information about the Wishek-Hankinson line is given in Table C.46.

**Table C.46 Wishek-Hankinson Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 341.0 | 205.6 | 10 mph | 143 tons | 850,906 | 914,681 |

In 2004, 31.6 million bushels were generated on the Dakota Subdivision, which is roughly 2.3 million greater than the three year average from 2002 to 2004 of 29.2 million bushels. This resulted in 8,196 carloads generated in 2004. Detailed information about the grain movements generated over the Dakota Subdivision is given in Table C.47.

**Table C.47 Grain Movements Generated on the Dakota Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 29,297,447 | 31,601,455 |
| **Tons** | 850,906 | 914,681 |
| **Cars** | 7,625 | 8,196 |
| **Cars Per Mile** | 56 | 60 |

## *Aberdeen Subdivision (DMVW):*

### Geneseo Junction-Havana

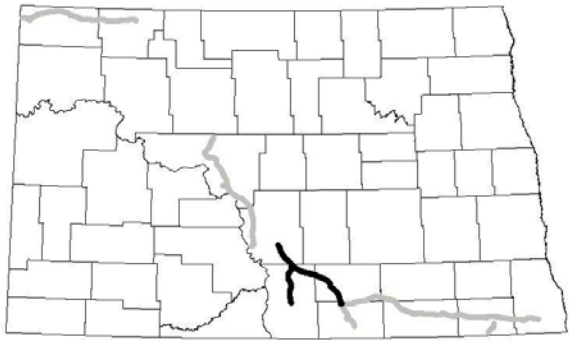
The Geneseo Junction-Havana Line is part of the DMVW Aberdeen Subdivision in southeast North Dakota. The Geneseo Junction-Havana line runs from the Geneseo Junction on the DMVW Dakota Subdivision located 0.7 miles west of Geneseo and runs southwest 20.8 miles to Havana, near the South Dakota Border.

The Aberdeen Subdivision has a maximum speed of 10 miles per hour and a maximum carload of 134 tons. Detailed information about the Geneseo Junction-Havana line is given in Table C.48

**Table C.48 Geneseo Junction-Havana Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 43.3 | 64.1 | 10 mph | 134 tons |

## *Napoleon and Hazelton Subdivisions (DMVW):*



### Wishek-Moffit Line (DM151)

The Wishek-Moffit Line is the DMVW Napoleon Subdivision in south central North Dakota. The Wishek-Moffit line connects to the Dakota Subdivision at Wishek and runs northwest 52.9 miles to Moffit.

The Napoleon Subdivision has a maximum speed of 10 miles per hour and a maximum carload of 134 tons. Due to confidentiality reasons, grain movements over the Wishek-Moffit line are not reported. Detailed information about the Wishek-Moffit line is given in Table C.49.

**Table C.49 Wishek-Moffit Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 341.0 | 391.9 | 10 mph | 134 tons |

**McKenzie-Linton Line (DM151) Abandoned from a mile south of Moffit junction to Linton**

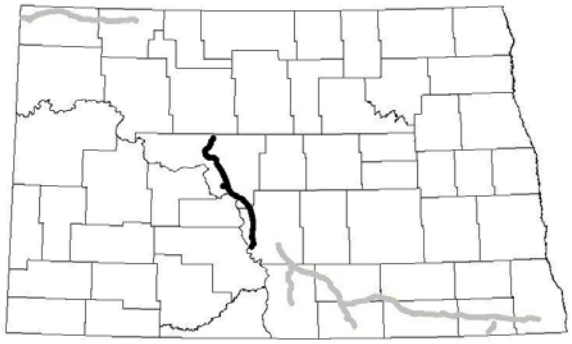
The McKenzie-Linton line is the DMVW Hazelton Subdivision in south central North Dakota. The McKenzie station is located 18.3 miles east of Bismarck on the Jamestown Subdivision of the BNSF main line. The McKenzie-Linton line connects to the Jamestown line and runs south 45.3 miles to the Linton station.

The Hazelton Subdivision has a maximum speed of 10 miles per hour and a maximum carload of 134 tons. Due to confidentiality reasons, grain movements over McKenzie-Linton line are not reported. Detailed information about the McKenzie-Linton line is given in Table C.50.

**Table C.50 McKenzie-Linton Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 0.0 | 45.3 | 10 mph | 134 tons |

## *Missouri Valley Subdivision (DMVW):*



### Max-Bismarck Line (DM149 & DM 151)

The Max-Bismarck line is commonly referred to as the Missouri Valley Subdivision of the DMVW in North Dakota. The line runs from the Max station on the CPR Newtown subdivision 48.2 miles west of Drake south 93.3 miles to the Bismarck station. The Max-Bismarck line connects to the BNSF Jamestown Subdivision of the main line at Bismarck.

The Missouri Valley Subdivision has a maximum speed of 10 miles per hour and a maximum carload of 134 tons between Bismarck and Falkirk, and 143 tons on the remainder of the line. In 2004, 278,908 tons of grain was generated on the Max-Bismarck line which is 16% higher than the three year average from 2002 to 2004 of 241,282. Detailed information about the Max-Bismarck line is given in Table C.51.

**Table C.51 Max-Bismarck Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 341.0 | 205.6 | 10 mph | 134 tons | 241,282 | 278,908 |

In 2004, 9.8 million bushels were generated on the Missouri Valley Subdivision, which is roughly 1.3 million greater than the three year average from 2002 to 2004 of 8.5 million bushels. This resulted in 2,499 carloads generated in 2004. Detailed information about the grain movements generated over the Dakota Subdivision is given in Table C.52.

**Table C.52 Grain Movements Generated on the DMVW Missouri Valley Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 8,483,620 | 9,785,310 |
| **Tons** | 241,282 | 278,908 |
| **Cars** | 2,162 | 2,499 |
| **Cars Per Mile** | 23 | 27 |

## *Western Subdivision (DMVW):*

### Flaxton-Montana Line (DM125)

The Flaxton-Montana Line is commonly known as the Western Subdivision of the DMVW in North Dakota. The line runs from the Flaxton station on the CPR Portal Subdivision of the main line in northern North Dakota 10.3 miles west to the BNSF Crosby Subdivision. From the Crosby station, the Western Subdivision runs 29.9 miles west to the Montana border.

The Western Subdivision has a maximum speed of 10 miles per hour and a maximum carload of 134 tons. In 2004, 140,326 tons of grain was generated on the Flaxton-Montana line which is 23% below the three year average from 2002 to 2004 of 183,148 tons. Detailed information about the Flaxton-Montana Line is given in Table C.53.

**Table C.53 Flaxton-Montana Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 540.5 | 676.4 | 10 mph | 134 tons | 183,148 | 140,326 |

In 2004, 4.7 million bushels were generated on the Western Subdivision, which is roughly 1.5 million less than the three year average of 6.2 million bushels. This resulted in 1,257 carloads in 2004. Detailed information about the grain movements generated over the Western Subdivision is given in Table C.54.

**Table C.54 Grain Movements Generated on the DMVW Western Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 6,159,356 | 4,720,557 |
| **Tons** | 183,148 | 140,326 |
| **Cars** | 1,641 | 1,257 |
| **Cars Per Mile** | 21 | 18 |

## *Bisbee Subdivision (NPR):*

### Fordville-Kenmare Line (NPR135 & NPR139)

The Fordville-Kenmare Line is the NPR Bisbee Subdivision in north central North Dakota. The Fordville station is located 34.3 miles west of Oslo on the Devils Lake Subdivision. The Fordville-Kenmare line connects to the Devils Lake line and runs northwest 216.8 miles to the Kenmare station.

The branch line from Fordville-Kenmare has a maximum travel speed of 10 miles per hour, and a maximum carload capacity of 143 tons. In 2004, the Fordville-Kenmare line generated 23,099,658 bushels, slightly greater than the average from 2002-2004 of 22,010,268. Tables C.55 provides a detailed summary of the segment.

**Table C.55 Fordville-Kenmare Line**

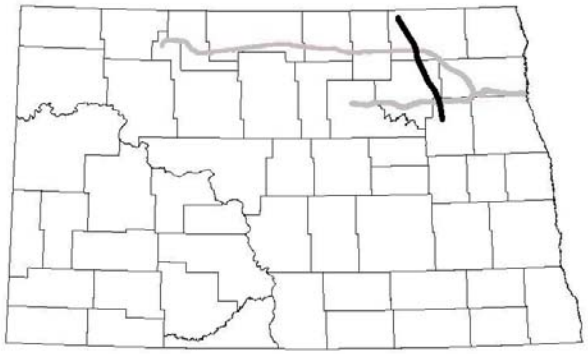
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 389.2 | 606.0 | 10 mph | 143 tons | 634,715 | 596,838 |

Table C.56 gives a detailed summary of the grain movements over this line. In, 2004, the number of bushels shipped on this branch line is more than 1,000,000 bushels higher than the three-year average. This resulted in 5,687 carloads in 2004, which is 6.3% higher than the three year average of 5,348. Detailed information about the grain movements over the Bisbee Subdivision is given in Table C.56.

**Table C.56 Grain Movements Generated on NPR Bisbee Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 22,010,268 | 23,099,658 |
| **Tons** | 596,838 | 634,715 |
| **Cars** | 5,348 | 5,687 |
| **Cars Per Mile** | 25 | 26 |

## *Sarles – Lakota line: (NPR)*



### Lakota-Sarles Line

The Lakota-Sarles line begins just north of the Lakota station, which is located 24.6 miles east of Devils Lake on the Devils Lake Subdivision of the BNSF main line. The Lakota-Sarles line runs north 73 miles to the Sarles station.

NPR began operation on this line after it was acquired from BNSF in October 2005. Movement data from 2004 represents BNSF shipments. The Lakota-Sarles line has a maximum speed of 10 miles per hour and a maximum carload of 134 tons. Detailed information about the Lakota-Sarles segment is given in Table C.57.

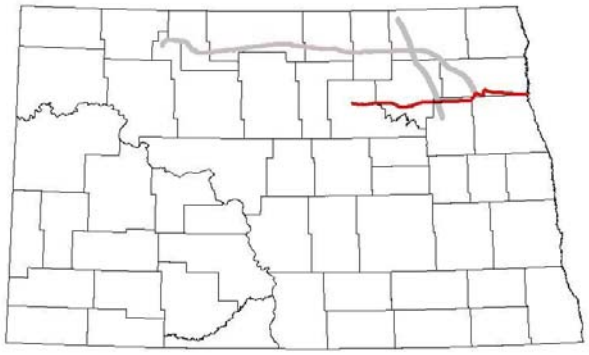
**Table C.57 Lakota-Sarles Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 0.0 | 72.4 | 25 mph | 134 tons |

As NPR began operation on the Lakota-Sarles Line in October 2005, there is no history of commodity movements under NPR operation.

## *Devils Lake Subdivision (NPR):*

### Oslo-Devils Lake Line (NPR144)



The Oslo-Devils Lake line is part of the NPR Devils Lake Subdivision in northeast North Dakota. The Oslo Station is located 48.5 miles west of Thief River Falls, Minnesota. The line runs 118 miles west from Oslo to the Harlow station.

The branch line from Oslo-Devils Lake operates at speeds ranging from 5 to 25 mph. The maximum car load is 143 tons. In 2004, the Oslo-Devils Lake line generated 13,373,572 bushels which is more than 1.5 million greater than the average from 2002-2004 of 11,833,771 bushels. Table C.58 provides a detailed summary of the segment.

**Table C.58 Oslo-Devils Lake Line**

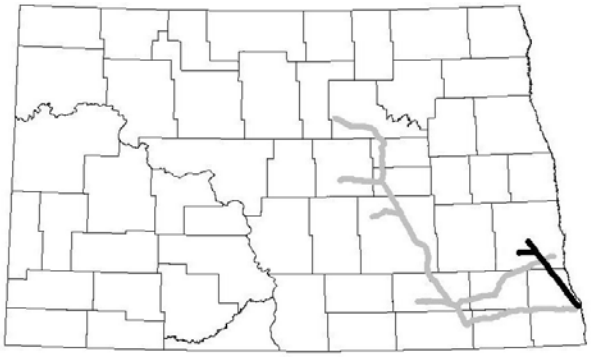
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 354.9 | 472.9 | 5-25 | 143 tons | 348,563 | 395,967 |

Table C.59 gives a detailed summary of the grain movements over the Devils Lake Subdivision. In, 2004, the number of bushels shipped on this branch line is over 1.5 million higher than the three-year average. This resulted in 3,548 carloads in 2004, which is nearly 14% higher than the three year average of 3,123.

**Table C.59 Grain Movements Generated on the NPR Devils Lake Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 11,883,771 | 13,373,572 |
| **Tons** | 348,563 | 395,967 |
| **Cars** | 3,123 | 3,548 |
| **Cars Per Mile** | 14 | 16 |

## *Second Subdivision (RRVW):*



### Wahpeton Jct.-Casselton Line (RV051 & RV085)

The Wahpeton Junction-Casselton line is the largest portion of the RRVW's Second Subdivision in southeastern North Dakota. The line connects to the BNSF Jamestown Subdivision and runs southeast 53.6 miles to the Wahpeton Junction. The Wahpeton Junction-Casselton Line has a maximum speed of 25 mph and a maximum carload of 143 tons. A detailed summary of the segment is included in Table C.60.

**Table C.60 Wahpeton Jct.Casselton Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 1.4 | 55.0 | 25 mph | 143 tons |

### Chaffee Jct.-Chaffee Line (RV051)

The Chaffee Junction-Chaffee Line is part of the RRVW's Second Subdivision in southeastern North Dakota. The line connects to the Wahpeton Junction-Casselton line and runs west 11.6 miles. The Chaffee Junction-Chaffee has a maximum speed of 25 mph and a maximum carload of 143 tons. A detailed summary of the segment is included in Table C.61.

**Table C.61 Chaffee Jct.-Chaffee Line**

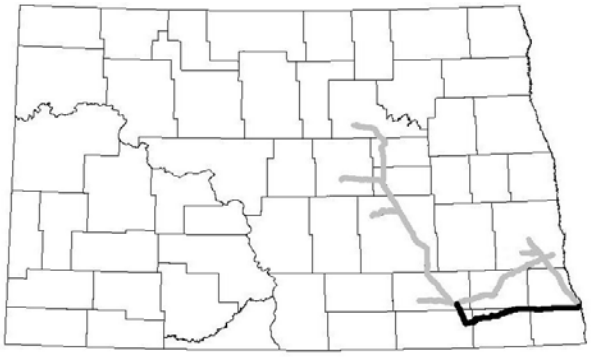
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 0 | 11.6 | 25 mph | 143 tons |

Table C.62 gives a detailed summary of the grain movements over the RRVW Second Subdivision. In 2004, the number of bushels shipped on this branch line is nearly 1 million higher than the three-year average. This resulted in 4,655 carloads in 2004 which was 4.2% higher than the three year average of 4,465.

**Table C.62 Grain Movements Generated on the RRVW Second Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 17,380,672 | 18,328,106 |
| **Tons** | 498,277 | 519,450 |
| **Cars** | 4,465 | 4,655 |
| **Cars Per Mile** | 68 | 71 |

## *Third Subdivision (RRVW):*



### Oakes Junction-Independence Line (RV063)

The Oakes Junction-Independence line is commonly referred to as the RRVW Third Subdivision in southeastern North Dakota. The line connects to the BNSF main line at Wahpeton and runs 88.8 miles west and north to the Independence station via Oakes.

The Oakes Junction-Independence line has a maximum travel speed of 25 miles per hour, and a maximum carload capacity of 143 tons. In 2004, the Oakes-Independence line generated 19,083,965 bushels which is nearly 40% greater than the average from 2002-2004. Table C.63 provides a detailed summary of the segment.

**Table C.63 Oakes Junction-Independence Line**

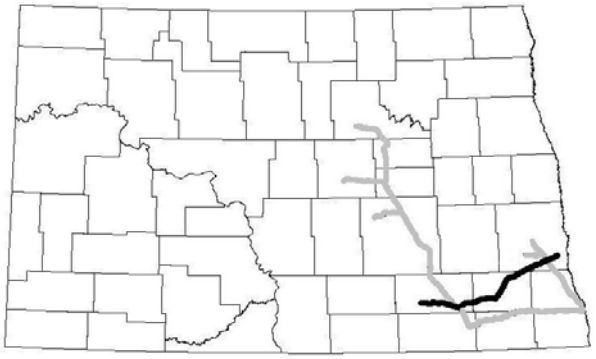
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 76.5 | 0 | 25 | 143 tons | 397,225 | 556,390 |

Table C.64 gives a detailed summary of the grain movements over this line. In 2004, the number of bushels shipped on this branch line is over 5 million higher than the three-year average. This resulted in 4,986 carloads in 2004, which is 40% greater than the three year average of 3,559.

**Table C.64 Grain Movements Generated on the RRVW Third Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 13,643,405 | 19,083,965 |
| **Tons** | 397,225 | 556,390 |
| **Cars** | 3,559 | 4,986 |
| **Cars Per Mile** | 46 | 65 |

## *Fourth Subdivision (RRVW):*



### Horace-Edgeley Line (RV087, RV055 & RV091)

The Horace-Edgeley line is commonly referred to as the RRVW Fourth Subdivision in southeastern North Dakota. The line runs in an east-west direction a distance of 98.4 miles and intersects with the RRVW Second, Third, and Sixth Subdivisions at Davenport, Independence, and LaMoure respectively.

The Horace-Edgeley line has a maximum travel speed of 25 miles per hour, and a maximum carload capacity of 143 tons. In 2004, the Horace-Edgeley line generated 249,910 tons which is nearly 29% less than the average from 2002-2004. Table C.65 provides a detailed summary of the segment.

**Table C.65 Horace-Edgeley Line**

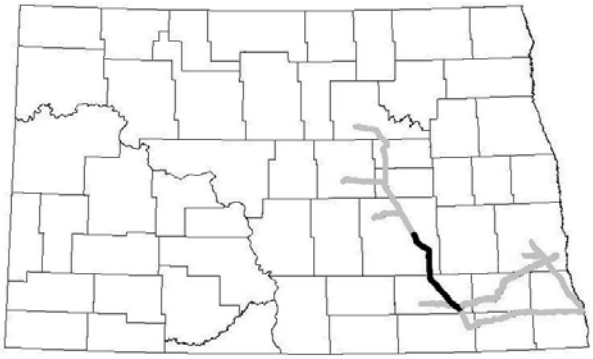
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload | Tons Generated (3 yr. avg. 02, 03, 04) | Tons Generated (2004) |
|---|---|---|---|---|---|
| 9.5 | 107.9 | 25 mph | 143 tons | 351,224 | 249,910 |

Table C.66 gives a detailed summary of the grain movements over this line. In 2004, the number of bushels shipped on this branch line is over 5 million higher than the three-year average. This resulted in 2,239 carloads in 2004, which is 40% less than the three year average of 3,147.

**Table C.66 Grain Movements Generated on the RRVW Fourth Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 11,939,576 | 8,477,846 |
| **Tons** | 351,224 | 249,910 |
| **Cars** | 3,147 | 2,239 |
| **Cars Per Mile** | 32 | 23 |

## *Sixth Subdivision (RRVW):*



### Jamestown-LaMoure Line (RV099)

The Jamestown-LaMoure line is commonly referred to as the RRVW Sixth Subdivision in southeastern North Dakota. The line connects to the BNSF Jamestown Subdivision of the main line and runs south 48.5 miles to the Lamoure station.

The Jamestown Subdivision has a maximum travel speed of 25 miles per hour and a maximum carload capacity of 134 tons. Due to confidentiality reasons, grain movement data for the Jamestown-LaMoure line is not reported. Detailed information about the Jamestown-LaMoure Line is given in Table C.67.

**Table C.67 Jamestown-LaMoure Line**

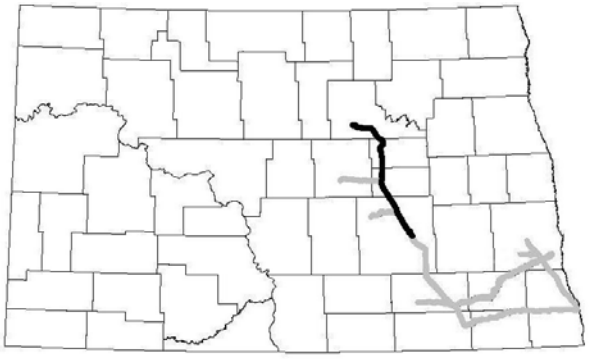
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 2.0 | 48.5 | 25 mph | 134 tons |

Table C.68 gives a summary of the grain movements over this line.

**Table C.68 Grain Movements Generated on the RRVW Sixth Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 1,000,000-2,000,000 | 1,000,000-2,000,000 |
| **Tons** | < 50,000 | < 50,000 |
| **Cars** | < 500 | < 500 |

## *Seventh Subdivision (RRVW):*



### Jamestown-Maddock Line (RV017, RV019, RV083 & RV099)

The Jamestown-Maddock Line is commonly referred to as the RRVW Seventh Subdivision in central North Dakota. The line connects to the BNSF Jamestown Subdivision of the Main line and the RRVW Sixth Subdivision at Jamestown and runs North 78.3 miles to Oberon and 15.4 miles west to Maddock.

The Jamestown-Maddock line has a maximum travel speed of 25 miles per hour, and a maximum carload capacity of 143 tons. In 2004, the Jamestown-Maddock line generated 75,617 tons of grain which is 15% below the three year average from 2002 to 2004 of 89,636 tons. Detailed information about the Seventh Subdivision is given in Tables C.69 and C.70.

**Table C.69 Jamestown-Oberon Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 0.0 | 78.3 | 25 mph | 134 tons |

**Table C.70 Oberon-Maddock Line**

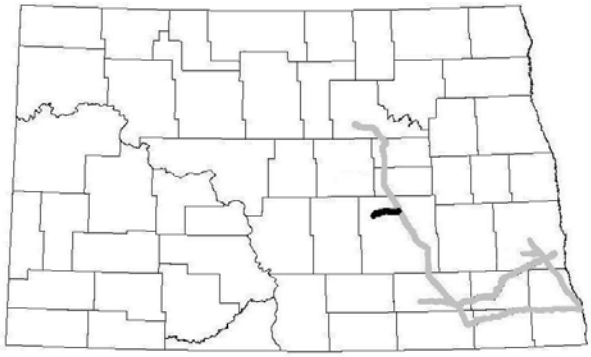
| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 0.0 | 15.4 | 25 mph | 134 tons |

Table C.71 gives a detailed summary of the grain movements over this line. In 2004, the number of bushels shipped on this branch line is over 300,000 higher than the three-year average. This resulted in 1,222 carloads in 2004, which is 15% higher than the three year average of 1,060.

**Table C.71 Grain Movements Generated on the RRVW Seventh Subdivision**

| Quantity | Three Year Average (02, 03, 04) | 2004 |
|---|---|---|
| **Bushels** | 4,112,161 | 4,781,911 |
| **Tons** | 118,270 | 136,323 |
| **Cars** | 1,060 | 1,222 |
| **Cars Per Mile** | 11 | 13 |

## *Eighth Subdivision (RRVW):*



### Pingree-Woodworth Line (RV081)

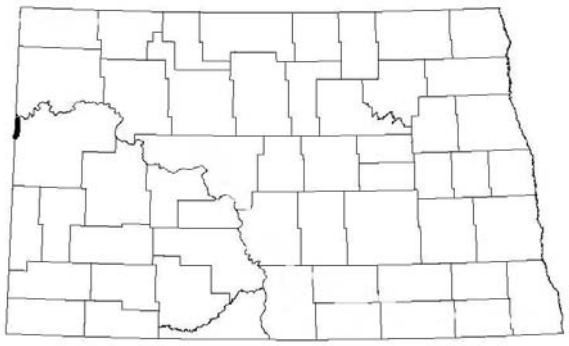
The Pingree-Woodworth line is commonly known as the RRVW Eighth Subdivision in central North Dakota. The line connects to the RRVW Seventh Subdivision at Pingree and runs 21.55 miles west to the Woodworth station.

**Table C.72 Pingree-Woodworth Line**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 0.4 | 21.55 | 25 mph | 134 tons |

For confidentiality reasons, grain movements over the Eighth Subdivision are not reported.

## *Sidney Line (YVSR):*



### Sidney, MT-Glendive, MT

The Sidney Line runs from Glendive, MT to Snowdon, MT, with 8.7 miles in North Dakota.

**Table C.73 Sidney Line (ND segment)**

| Beginning Milepost | Ending Milepost | Maximum Speed | Maximum Carload |
|---|---|---|---|
| 64.6 | 73.3 | NA | NA |

YSVR began operations August 15, 2005 and has no movement history.

# APPENDIX D

# GOALS FOR NORTH DAKOTA RAIL PLANNING

## RAIL PLAN ADVISORY AND VISIONING

A rail advisory group was formed to provide input to the rail plan update process and to establish a vision for the future of North Dakota's rail system. The advisory group consisted of various stakeholders in the rail industry in North Dakota. The group held four meetings, including a joint meeting with Minnesota to consider cross border issues and issues common to both states.

**State Rail Advisory Group**

- BNSF Railway
- Canadian Pacific Railway
- Dakota, Missouri Valley & Western Railroad
- Northern Plains Railroad
- Red River Valley & Western Railroad
- Fargo/Moorhead MetroCog
- Grand Forks/East Grand Forks MPO
- Bismarck/Mandan MPO
- North Dakota Department of Transportation
- North Dakota Public Service commission
- North Dakota Department of Agriculture
- North Dakota Department of Commerce
- Operation Lifesaver
- Federal Railroad Administration
- Federal Highway Administration

The visions and strategies generated from the advisory committee were condensed to formulate the rail planning goals outlined in Chapter 1. The main visions identified are:

1. A safe and secure railroad system, without fatalities or trespassers, that is integrated with a comprehensive homeland security vision and is achieved without excessive administrative burdens.
2. An integrated railroad network.
3. An adequately maintained railroad infrastructure that is capable of meeting current and future service demands.
4. Railroad operations and infrastructure that enhance community mobility and quality of life.
5. A measurable level of railroad service that reflects service frequencies, times, and equipment availability; develop a separate level of service for freight transportation
6. Improve service by eliminating choke points and through consolidation that benefits both railroads and shippers.
7. A viable railroad system with adequate service and capacity to promote efficiency and growth and allow existing and potential businesses to develop and expand into national and world markets.
8. A favorable business and regulatory climate for shippers and railroads that reflects a heightened focus on investment and business development.
9. Public-private partnerships that improve communication and coordination among shippers, governments, and railroad companies and promote business development, economic growth, and grade crossing safety.
10. A viable and coordinated inter/multimodal facilities network that maximizes benefits to the state, allows agricultural and manufacturing businesses to grow and diversify, and improves access for communities.
11. Coordinated public-private multimodal planning efforts that consider all modes of transportation to make the best investments of public and private funds.

From these primary visioning statements, specific categories within each vision were identified.

# North Dakota Rail Planning Vision Statements

1. **A safe and secure railroad system, without fatalities or trespassers, that is integrated with a comprehensive homeland security vision and is achieved without excessive administrative burdens**
   - A practical and achievable partnership between private and public agencies to help ensure the success of railroad operations
   - A rail system that expedites the movement of commodities, goods, materials, and people and that contributes to and does not hinder the safety and security of individuals and communities in North Dakota
   - Railroads that contribute to an integrated comprehensive focus on homeland security
   - A safe and secure railroad system that is achieved without excessive administrative burdens
   - Enhanced opportunities for secure shipments of identity preserved products by rail
   - No deaths at rail-highway grade crossings and within the industry itself including derailments, rail operations, and trespassers on railroad property
   - A public that is better educated about grade crossing safety and procedures
   - No unprotected grade crossings
   - More grade separations for safer highway-rail intersections
   - No trespassers on railroad properties
   - Greater awareness at border crossings of the potential impacts of trespassers on homeland security
   - An updated rail/highway crossing inventory which supports proper safety measures being in place
   - Installation of automated signals at high-volume at-grade crossings or where visibility is poor
   - Closing of unnecessary at-grade crossings

2. **A railroad network that provides enhanced access in both rural and urban areas and is integrated with alternative transportation services**
   - A connected transportation system with alternative services, including public transportation
   - Enhanced access in both urban and rural areas
   - A fully integrated multimodal transportation infrastructure
   - Smooth transitions from short line railroads to Class 1 railroads

3. **An adequately maintained railroad infrastructure that is capable of meeting current and future service demands**
   - A rail system (including short line railroads) that is adequately maintained with a track structure capable of meeting current and future service demands
   - Upgraded railroad infrastructure capable of handling increased car weights and train speeds
   - Public infrastructure investment to assist short line and Class 1 railroads

4. **Railroad operations and infrastructure that enhance community mobility and quality of life while reducing intermodal conflicts**
   - Minimize intermodal conflicts
   - Quiet zones are a local issue
   - Quiet zones should be implemented without compromising public safety
   - Less noise – horns, operations and coupling
   - ***Smart Growth*** of communities (integrate rail planning with urban planning)
   - Include railroads and rail safety in land use planning (public vs. private crossings, siting of residential developments)
   - Tradeoff between reduced through-town speeds and blocked crossing duration
   - Reduce time lost due to blocked crossings

5. **A measurable level of railroad service that reflects service frequencies, times, and equipment availability (separate passenger and freight); develop a separate level of service for freight transportation – i.e. capacity of railroads to move desired volumes)**
   - Increased equipment availability to meet service demands
   - Better arrival and departure times for passenger rail services
   - A measurable and understandable level of service
   - Competitively priced passenger rail service

6. **Improve service by eliminating choke points and through consolidation that benefits both railroads and shippers**
   - No bottlenecks, pinch-points, or system defects on the rail system which limit effects cascading to other modes
   - Service consolidation locations which make sense to shippers, service providers and other modes

7. **A viable railroad system with adequate service and capacity to promote efficiency and growth and allow existing and potential businesses to develop and expand into world and national markets**
   - An economically viable railroad system
   - Railroad profitability which supports reinvestment in rail equipment and infrastructure
   - Railroad service offerings that accommodate efficiency, growth, and capacity

- A rail system that allows existing and potential businesses to develop and expand in North Dakota by moving into world and national markets
- Rail services that contribute to and do not hinder economic growth
- A rail system that accentuates North Dakota's strengths and capabilities

8. **A favorable business and regulatory climate for shippers and railroads that reflects a heightened focus on investment and business development**
   - A favorable business and regulatory climate for shippers and railroads
   - Heightened focus on investment and business development

9. **Public-private partnerships that improve communication and coordination among shippers, governments, and railroad companies and promote business development, economic growth, and grade crossing safety**
   - More public/private partnerships that would specifically improve railroad competitiveness
   - Public programs for the retention of abandoned railroad rights-of-way and to assess different opportunities for right-of-way use
   - Improved communications between state and local economic development entities and railroads to move forward new ideas for business opportunities and growth
   - Enhanced communication between the public and railroads to achieve better understanding of expectations and perspectives on both sides
   - ND rail system should become a key component in economic development considerations of the state including investment in necessary projects
   - Mesh the expectations of shippers, governments, and railroads
   - Leverage state investments in the rail system through project prioritization
   - Entities other than state and local government increase contribution to grade crossing safety

10. **A viable and coordinated inter/multimodal facilities network that maximizes benefits to the state, allows agricultural and manufacturing businesses to grow and diversify, and improves access for communities**
    - Geographic locations of intermodal/multimodal facilities that allow agricultural and manufacturing opportunity to grow and diversify, while maintaining the viability of the facilities
    - Smaller distributed facilities in addition to larger centralized facilities
    - Established thresholds for intermodal facilities to assist in facility planning
    - Structure to coordinate facility location and size to maximize the overall benefit to the state rather than individual communities
    - Provide intermodal connectivity consistent with community commitment, resources and capabilities
    - Improve and enhance access roads to intermodal facilities
    - Real-time data exchange among modes for optimization of operations

- Planning that considers other types of intermodal movements in addition to containerized shipments
- Multimodal commerce centers including intermodal, transfer and transloading capabilities

### 11. Coordinated public-private multimodal planning efforts that consider all modes of transportation in order to make the best investments of public and private funds

- More flexibility and partnerships between states, cities and railroads to achieve intermodal connectivity
- Facility planning and construction with the necessary highway infrastructure to provide adequate service to and from the facility
- A rail/intermodal plan that addresses both long-term and geographic competitiveness of North Dakota transportation
- Strategic investment of public funds

# Strategies to Achieve North Dakota Rail Plan Visions

Action items, or strategies, were developed to achieve the rail plan visions. The strategies were further refined to ensure that the proposed actions were within the scope of the rail plan. The strategies are presented below.

1. **A safe and secure railroad system, without fatalities or trespassers, that is integrated with a comprehensive homeland security vision and is achieved without excessive administrative burdens**
    - Broaden Operation Lifesaver target groups to achieve a public that is better educated about grade crossings
    - Include rail safety issues in farmer safety seminars, ATV, Snowmobile and gun safety courses and in schools
    - Support mandated grade crossing material in driver education
    - Develop a best practices manual for implementation of safety measures by working with the appropriate AASHTO committees
    - Identify safety and security issues and develop a prioritization method for reaching the desired performance level
    - Update the grade crossing inventory so that it is reliable and consistent – and implement a user friendly update process
    - Survey local communities to identify safety and security problems
    - Add upgrade of existing automated signals as appropriate to new installation of automated signals
    - Integrated rail and local planning – to potentially include plat review, city & county, MPO technical reviews, city & county planning commissions, city & county commissions
    - Integrate rail planning into other planning processes to align goals – increase communication of parties involved
    - Continue to work with railroads and local governments to provide incentives to reduce at-grade crossings – require local subdivisions to address the issue of grade crossings before zoning would be approved
    - Link funding issues with implementation of safety measures
    - Review law regarding railroad trespassers; consider advocating change if indicated
    - Support enforcement of grade crossing violations
    - Modify statement regarding border crossing to include shipments as well as trespassers – also add the impact of trespassers on public safety in general

2. An integrated railroad network
    - Evaluate open access
    - Identify what is needed to accomplish the goal of an integrated railroad network
    - Develop an accessibility rating to identify areas which need improvements
    - Expand yard tracks at connections or put in additional sidings at yards, providing quicker turn times and reduction in delays
    - Target specific areas or projects that would benefit from increased access
    - Survey railroads to identify problems with transitions between Class I railroads and Short Line railroads including documentation, physical problems such as mixed destination shipments, capacity, and managerial issues.
    - Target specific areas or projects that would benefit from increased access

3. An adequately maintained railroad infrastructure that is capable of meeting current and future service demands
    - Continue to provide public notice on major improvements of tracks – so there will be an opportunity to provide input to the process
    - Develop procedures and rationale for investment decisions for state rail fund programs – include a timely response requirement for both the state and applicants.
    - Consider the effect of the infrastructure on the overall transportation network of the state
    - Use survey and/or other means to determine where problems are – and to develop strategies to address the most critical situations first
    - Coordinate plans of entities involved (NDDOT, Class I, Short Line) to include highway planning
    - Identification of demand side – also, determine whether railroads would be willing to share improvement plans and improvement strategies
    - Encourage development of a formal mechanism to determine adequate service between Short Lines and Class I i.e., more supply chain information processing (more information = less risk of lack of service)
    - Continue/initiate annual meetings between railroads and customers to discuss car availability and infrastructure improvement needs
    - Support federal tax incentives to short lines for implementation of improvements (i.e., fencing mandate) to provide relief for short lines and branch lines

4. Railroad operations and infrastructure that enhance community mobility and quality of life
    - Support adequate advance notice of blocked crossings due to construction or loading/unloading/siding/switching operations to accommodate emergency services and public highway travel
    - Quiet zones are local issue

- Assess tradeoff between reduced through-town train speeds and the length of time crossings are blocked
- Minimize intermodal conflicts – grade separations, alternate highway routes
- Facilitate Smart Growth of communities by integrating rail planning with urban planning. Include railroads and rail safety issues in land use planning (public vs. private crossings, siting of residential developments)
- Explore potential for rail relocation projects

5. **A measurable level of railroad service that reflects service frequencies, times, and equipment availability (separate passenger and freight); develop separate level of service for freight transportation – i.e. capacity of railroad to move desired volumes)**
    - Identify key level of service attributes and combine them to provide a measurable level of service indicator (TransAction initiative 2)

6. **Improve service by eliminating choke points and through consolidation that benefits both railroads and shippers**
    - Identify bottlenecks, pinch-points, or system defects on the rail system
    - Emphasize network improvements as a criteria for state rail assistance funds
    - Facilitate communication between shippers and transportation providers to show benefits of consolidation points
    - Assess the desirability of legislation to promote development of consolidation centers

7. **A viable railroad system with adequate service and capacity to promote efficiency and growth and allow existing and potential businesses to develop and expand into world and national markets**
    - Identify industries served by rail to identify the key rail network within the state, and also to identify areas for improvement which would increase benefits to shippers both on these segments and elsewhere
    - Promote an economically viable railroad system with railroad profitability that supports reinvestment in rail equipment and infrastructure

8. **A favorable business and regulatory climate for shippers and railroads that reflects a heightened focus on investment and business development**
    - Prioritization of rail assistance funds through competitive submission process

9. **Public-private partnerships that improve communication and coordination among shippers, governments, and railroad companies and promote business development, economic growth, and grade crossing safety (Transaction Initiatives 3, 12)**
    - Continue "visioning" type sessions with stakeholders to allow expectations of all parties to be communicated not only to the NDDOT, but among parties to enhance understanding and provide opportunities for collaboration

- Develop a multifaceted approach to the rail project screening process:
  - Benefit/Cost Analysis
  - Assess the project's importance to the economy (local, regional, state)
  - Consider the project's strategic impact on the state's rail network and local, regional and statewide transportation system
- Increase communication with private industry to assess rail needs and opportunities to invest with the state's best interests in mind
- Identify opportunities for private industry to contribute to grade crossing safety issues
- Identify opportunities with legislation aimed at economic development which may involve rail policies and infrastructure
- Assess opportunities for abandoned rail rights-of-way

**10. A viable and coordinated inter/multimodal facilities network that maximizes benefits to the state, allows agricultural and manufacturing businesses to grow and diversify, and improves access for communities (Transaction Initiative 7)**

- Conduct research, formal or informal, regarding the characteristics of successful intermodal facilities and how to accurately assess potential shipment volume
- Assess the desirability of smaller distributed facilities in addition to larger centralized facilities
- Assess the desirability of the use of rail funds to enhance connectivity of proposed facilities to maximize benefit to the local area and region
- Facilitate discussion between local government and facility ownership to ensure connectivity and the success of proposed facilities

**11. Coordinated public-private multimodal planning efforts that consider all modes of transportation in order to make the best investments of public and private funds**

- Rail Planning to serve as a facilitation/liaison between highway planning and private parties involved to provide adequate service to future facilities
- Develop a strategic plan for intermodal development. Serve as an information source regarding rail access for proposed facilities, and assess possible publicly funded rail access
- Continue visioning type sessions outside of the rail plan update to increase communication between stakeholders. This allows for further understanding of each party's concerns and opportunities
- Develop prioritization techniques for the allocation of state rail assistance funds to projects which have:
  - The best overall Benefit/Cost Ratio
  - Strategic benefits, such as rail network enhancement
  - Intermodal/multimodal connectivity benefits above and beyond direct local impacts
  - Economic enhancement benefits, state, regional, and local

# JOINT MINNESOTA-NORTH DAKOTA RAIL PLANNING CONFERENCE
# REGIONAL RAIL PLANNING ISSUES

September 27, 2005, a joint North Dakota – Minnesota rail conference was held in Fargo. Participants included the North Dakota Rail Advisory Group, planning representatives from the Minnesota (MNDOT) and North Dakota (NDDOT) Departments of Transportation and district engineers from border districts in both states.

The purpose of the conference was to: (1) involve stakeholders with interests in both Minnesota and North Dakota rail programs in a dialogue with MNDOT and NDDOT rail planners, (2) discuss common and cross-border rail and intermodal issues, and (3) identify areas of future coordination and collaboration between Minnesota and North Dakota to help meet the needs of both states.

A summary of the substance of the meeting is presented below. Detailed notes follow, under a separate heading.

**Access to Facilities and Transfer Points**. Access to and from facilities across state lines is essential for economic growth and trade. Access to shuttle elevators, plants, warehouses, and intermodal transfer facilities is especially important. Much of eastern North Dakota's grain crop moves to Minnesota ports. Continued access to these ports is vital. However, differences in truck size and weight regulations among states may affect truck access and the desirability of locations for industry.

**Improved communication** from shippers regarding new rail or intermodal facilities would provide benefit railroads, state DOT, and metropolitan and county governments. Advance notice of new facilities should be made available at the time of initial facility planning. This time frame would allow state and local transportation agencies time to react. This process would allow DOT to be proactive rather than reactive. Potential locations in proximity to access highways should be encouraged.

**Coordinated planning** could maximize available resources and simplify planning procedures. Several layers of planning exist within the region. However, all levels of government do not have access to the information they need. Metropolitan Planning Organizations and Councils of Government would like to develop better sources of cross-border traffic data, as well as better freight data for short- and long-term planning. The lack of freight data causes a reactive rather than a proactive approach. MPOs must respond to individual complaints and proposals without a comprehensive picture of overall freight flows and facility needs.

Moreover, current planning is automobile-oriented because of the lack of freight data and freight planning programs. Freight access and mobility should be fully considered in long-range planning, along with related safety considerations. However, railroads rarely participate in this process. Within state transportation departments, much of the planning occurs at central levels. Nevertheless, there is considerable opportunity for on-going communication between railroads and district engineers.

Integration of railroad objectives and infrastructure needs into state and local planning processes could improve community planning and avoid many potential conflicts and issues. For example, highway bridge construction planning should include criteria to accommodate doublestack trains and other high/wide loads moving over rail lines. Railroads need to participate in local government planning processes. However, there are multiple units of government to deal with, making it difficult for railroads actively participate in all the areas they would like. A streamlining of contacts among railroads, MPOs, and DOT districts could help improve communication and planning. The states could facilitate this communication and host annual meetings. Moreover, the railroads could plan annual meetings with each MPO to provide input into the long-range planning process.

# NOTES FROM THE JOINT MINNESOTA-NORTH DAKOTA RAIL PLANNING CONFERENCE

### Overview of State Rail Programs

**Tim Spencer—** Director of the Rail and Program Development Section of the Minnesota Department of Transportation— provided an overview of MN/DOT programs, including the Minnesota Rail Service Program (MRSI)and the Minnesota Railroad-Highway Grade Crossing Safety Improvement Program.

The MSRI program provides loans or grants to rail users and carriers to rehabilitate lines, improve rail shipping opportunities, and preserve and maintain abandoned rail corridors for future transportation use. These funds can be used for rail siding improvements and related facilities along a siding to improve loading efficiency. The MRSI Program has received both General Fund and Bond appropriations. However, the program has essentially funded itself for the last 25 years.

The Minnesota Railroad-Highway Grade Crossing Safety Improvement Program provides funds that are used to: (1) close and consolidate crossings, (2) install active signals and signal upgrades, (3) install passive signs, (4) improve sight distances, (5) improve crossing alignments and grades, (6) improve lighting, and (7) contribute to grade separation, up to the cost of signal installation. The USDOT Accident Prediction Formula is used to identify high hazard locations. MNDOT has developed several grade-crossing performance measures including: reducing crashes by 2 percent per year and programming 40 grade-crossing safety improvements per year. Moreover, MNDOT has created a condition formula to assess grade-crossing safety. During the TEA-21 period, 10 percent of Minnesota's Surface Transportation Program (STP) improvement funds were used for the grade crossing-program.

The recently passed SAFETEA-LU legislation includes authorization for Rail Relocation Funds. If funds are later appropriated by Congress, strict standards will likely be imposed. The most likely use of these funds will be for large urban areas.

**Robert Johnston** of the North Dakota Department of Transportation provided an overview of NDDOT rail programs and the state rail plan. The rail plan-which has three parts-was published in 1998. Currently, the plan is being updated and prepared for web access. The update will align the rail plan with TransAction, North Dakota's statewide strategic transportation plan. However, rates, car service, and other regulatory issues will be removed from the rail plan, as these issues are not within the purview of the NDDOT.

NDDOT has two revolving loan funds for rail assistance – Local Rail Freight Assistance (LRFA) and Freight Rail Improvement Program (FRIP). LRFA uses funds originally provided by the Federal Railroad Administration (FRA). The money retains its federal identity and LRFA

projects require FRA approval. FRIP uses state money derived from interest on repaid loans. FRIP generally mirrors LRFA in intent and application, but projects do not require FRA approval.

The Grade Crossing Safety Program includes the following components: support for Operation Lifesaver, signalization and signal upgrades, resurfacing of crossings, and crossing closures. In limited use, some of the funds may contribute to grade separations.

### Perspectives of Metropolitan Planning Organizations

**Robert Bright**—Executive Director of FM MetroCog, discussed relationships between the MPOs and state agencies, quiet zones, and access to intermodal facilities. Fargo-Moorhead is planning a quiet zone that would encompass 20 crossings and greatly reduce train horn noise in the metropolitan area. Access to intermodal facilities is a key to regional growth and is very important for the Fargo–Moorhead area MPOs. Fifty percent of trade in the region consists of exports. Shippers have expressed concerns about intermodal access and difficulty in getting and shipping containers difficulties – "how can we get the trains to stop?" Improved access, in part, depends upon the return-empty policies of steamship companies. Because of their desires for fast container cycle times, steamship companies are often reluctant to have their empty containers stopped for reloading at an interior point. However, identity preservation is very important to buyers and sellers in international trade. In particular, genetically modified and organic crops need containers for identity preservation. The empty-return policy isn't the only obstacle to improved access. Steamship capacity is also an issue—e.g., how to secure space for additional containers on-board already-full steamships.

**Earl Haugen**—Executive Director of the Grand Forks-East Grand Forks MPO—discussed grade-crossing issues, including the movement of highway traffic through crossings, and the long-range planning requirements of MPOs. MPOs must engage in long-range planning, with at least a 20-year time frame. In comparison, the time line for most transportation projects is very short-run. The TIP extends only a few years into the future. Nevertheless, there are many opportunities for multimodal collaboration and integrating long-run and short-run planning.

Many aspects of rail-highway interaction are important to MPOs. Blocked-crossing time is an issue at some crossings. However, grade separations are very expensive and are only practical on the heaviest-traveled highways. The GF – EGF MPO is working hard to identify potential safety issues and educate the public on grade crossings. In evaluating quiet zones, there is often a tradeoff between the infrastructure upgrades to implement quiet zones and other needed transportation improvements.

A 1996 study was performed of a potential intermodal facility in the Grand Forks area. However, interest has waned since the Grand Forks area experienced the 1997 flood. Some of the champions have moved on. The study concluded that more throughput would be needed to make the facility successful.

### Perspectives of District Engineers

**Robert Walton—** Fargo District Engineer of the North Dakota Department of Transportation—stressed the need to examine highway interactions with railroads. Cooperation between railroads and district engineers has been very successful with respect to highway construction projects and crossing issues. The CPR line at Enderlin is a case in point. A blocked-crossing warning sign was placed at an intersection near the crossing to keep queues from forming on local streets.

Other issues and opportunities relate to truck versus railroad movements. In many cases, it is better for highways if certain traffic moves over rail lines, especially heavy freight and very high/wide loads. Wind towers are an example. Vertical and lateral clearance is an issue. If the railroads cannot transport products such as wind towers, they must move via highways. Because of Interstate highway clearance restrictions, some of these shipments may shift to state highways. Similarly, heavy trucks may use state highways to avoid Interstate weight limits or special permits.

A key area of interaction is the updating and negotiation of maintenance agreements between railroads and NDDOT. An example is 10th Street in Fargo, which is on has been moved onto the state highway system. Agreements with railroads regarding crossings and bridges are out of date. There is uncertainty about who has maintenance responsibilities. Similar maintenance responsibility issues should be resolved with respect to crossing deterioration and rail bridge painting.

Bungalow slopes are another issue. Some are potentially in violation of clear zone rules. In some cases, the slopes are too steep—e.g., 8:1 instead of 2:1. In these cases, who is liable if a car leaves the road? (The railroads have indicated they are willing to work with NDDOT to construct the slopes to the desired ratio).

**Les Noehre—**Grand Forks District Engineer, NDDOT—emphasized the need for safety at grade crossings. Moreover, there is a need for increased communication between stakeholders regarding changes to the railroad system which impact highways—for example, the location of bean crushing plants. Another example is the construction of a large coal transload facility at Ardoch by American Crystal Sugar Company. More advance notice is helpful so that state and local agencies can plan highway adjustments. Communication between district engineers, railroads, and private companies is imperative. The main problem has been lack of communication by private companies, which have not communicated with NDDOT regarding potential expansions

**Jody Martinson—**representing the Detroit Lakes District of the Minnesota Department of Transportation—stressed safety and improved communication among all levels of government and railroads. In the Detroit Lakes District, $500,000 per year is spent on improving safety at rail-highway grade crossings. This is a major emphasis in the district. BNSF Railway and the

Detroit Lakes District are cooperating on the realignment of Highway 10, which will result in BNSF moving its tracks north. In general, there is a need for increased communication among agencies, railroads, and industry.

**Lynn Eaton—**Bemidji District Engineer of the Minnesota Department of Transportation—discussed the potential benefits that could arise from keeping heavy freight traffic on rail lines, including a reduction in the financial and maintenance burdens of county and state highways and improved safety. Planning for freight movements is an important part of the local area transportation planning partnerships between MN/DOT and county and local governments. The relationship between transportation and economic development is very important in local and district planning. Providing year-round highway access to industries and rail transfer facilities is a key objective. However, the freight modes need to be better integrated to increase flexibility and options.

Much of the truck traffic in the Red River Valley moves back and forth across state borders. Differences in truck configurations between states may be a problem for the trucking industry and businesses. However, federal action may be necessary to correct this situation. The potential exists for "freight ports" to be located at state borders to facilitate cross-border movements.

### Perspectives of Regional Railroads

**Dan Zink—**Vice President, Red River Valley & Western Railroad—emphasized capital availability as one of the key issues facing the North Dakota rail system. Will the capital be available to upgrade lines to sustain movements of 286,000-lb cars over the long run? Both North Dakota and Minnesota loan programs are very good. In fact, the state programs are more useful than the national RRIF program, which is targeted towards very large loans. The NDDOT revolving loan program is essential to North Dakota. Because it is a loan program, it provides discipline in investment. Preserving the integrity of the program is essential to the availability of capital in the future.

**Grade crossings** and related safety issues are a priority for the railroads. Crossing closures should be examined as a potential option. (Jack Olson of the NDDOT described the existence of a rail crossing closure incentive program.) The future of the railroad system in not completely clear. Some shrinkage in the current railroad network should be expected. The viability of intermodal facilities and shipment options is a key issue.

**Larry Jamieson—**of the Northern Plains Railroad (NPR)—stressed the importance of working with both states, regional railroads, Class I railroads, and the FRA to upgrade tracks and bridges to accommodate the 286,000-lb cars that are in high demand due to expansions and increased business. Service can be improved by expanding yard tracks at connection points, or putting in additional sidings to facilitate quicker turn times and avoid congestion and delay between Class 1's and short lines. Increased public education is needed concerning crossing safety procedures

and the consequences of trespassing on railroad property. These educational efforts should include farmers and hunters, and integrate training with public meetings.

### Perspectives of Class I Railroads

**Brian Sweeney—** Legislative Counsel of BNSF Railway—noted that BNSF has made substantial investments to increase railroad capacity and service in the nation and region. Over the last 3 three years, BNSF has invested $430 million in Minnesota and $261 million in North Dakota, and has made substantial investments in grain railcars. Technological improvements have also enhanced railroad capacity and efficiency. For example, remotely-controlled switching operations offer potential savings. However, they also pose labor-related issues which must be resolved.

It is important to include railroad infrastructure considerations and freight access in metropolitan and local land-use plans. Improved local planning can help reduce potential conflicts. For example, zoning that allows results in land development (especially residential) adjacent to tracks may lead to future noise issues in the community. Crossing closures can help safety and noise problems. However, they can be politically controversial. Restrictions on operating speeds by states or localities may actually worsen problems such as blocked-crossing time. Highway access to intermodal facilities is very important. Although rumors have surfaced about the future of the Dilworth facility, BNSF Railway has not announced plans to close, relocate, or demote the facility.

Railroads need assistance from stakeholder groups on legislative efforts to improve safety and benefit the economy. Railroad trespasser laws are one area of potential collaboration.

**Ed Dahlby—** Area Manager for Business Development of the Canadian Pacific Railway—identified the following issues and potential actions:
1. Continued maintenance and upgrades of Farm-to-Market roads to facilitate movements to rail heads.

2. Crossing safety.
   A. Enforcement of existing laws
   B. Additions of signals where possible
   C. Major highways to have grade separations
   D. New technological developments for grade crossing safety (GPS warning system, solar powered advanced warning devices, North Star Communication warning system, etc.)
   E. Don't pass laws that add burdens to railroads' operations or costs

3. ***Short line*** issues.
    A. Need to upgrade with heavier rail and to 286,000-lb capacity
    B. Upgrade with heavier rail
    C. Bridge work needed
    D. Crossing upgrades

4. Transload facilities needed.
    A. Agricultural Products (identity preservation)
    B. Niche market opportunities
    C. Facilities at Ports for transfer of goods from railcar to ocean container
    D. Export and Import marketing strategy
    E. Trade Free Zones for warehousing products until delivery

5. Tax incentives, grants or low interest loans for companies to install rail as a their major mode of freight transportation.

6. No conversions of farm crossings to developments without authority from the State or Railroad (Smart Growth).

# APPENDIX E

# BENEFIT-COST CRITERIA

## INTRODUCTION

In benefit-cost analysis of rail rehabilitation projects, the state compares criteria under two scenarios: a base case, or null alternative, in which the state takes no action, and a project case in which the state makes investments or takes other actions to affect the outcome of a light-density line. The base case usually describes one of two future states – continued operation of a rail line (usually with diminishing service) or abandonment.

Benefits are estimated by comparing future conditions in the base case (without an investment) to future conditions in the project case (with an investment). The base case is also referred to as the *null alternative*, indicating that no capital investment occurs.

Under Base Case 1, the primary efficiency benefits are cost savings to rail operators and safety benefits from improved track conditions. If the investment decision impacts the distribution of traffic between railroads and trucks, highway costs are also considered—e.g., pavement resurfacing and maintenance cost savings as a result of keeping heavy freight traffic on rail lines. Under Base Case 2, the primary efficiency benefits are: (1) shipper cost savings, (2) railroad income gains, (3) shipper profit on new output produced as a result of the investment, and (4) highway cost savings.

Shipper and railroad benefits are referred to as *primary efficiency benefits*, because they result directly from an investment. However, *transportation efficiency benefits* also include highway costs savings as a result of traffic shifts among modes.

### Base vs. Incremental Traffic

In benefit-cost analysis, *base traffic* is the number of carloads, containers, and tons that would be shipped under the null and project alternatives, by any mode. *Incremental traffic* is the amount of traffic that would be shipped under the project alternative (with the investment), but would not be shipped under the null alternative (without the investment).

Incremental traffic is the result of new or increased production. However, it does not include shifts in traffic among modes, or transfers within the local economy. Incremental production may result from various business decisions. For example, a new industry may open that would not have located in the state without the rail improvement. A more typical case is one in which a business increases its output because the rail improvement has reduced the cost of transportation or improved the level of transportation services.

Incremental traffic may consist of traffic retained on the rail line by preventing an abandonment that would reduce shipper output or result in business closures. The latter result is an extreme case. More typically, businesses may reduce output and quantity shipped by truck after abandonment because of higher truck rates and reduced shipping capacity.

In many cases, incremental traffic will be zero, even if shipper output levels change in the base or project cases. The change in a shipper's output or volume may be the result of local transfers because the business has become less competitive locally. Such transfers often occur among grain elevators. Increased crop production in a region rarely results from isolated railroad investments. An increase or decrease in the volume handled by one grain shipper may be offset by corresponding changes in the volume handled by nearby elevators. However, if a railroad investment stimulates increased crop production in the area, then this new production should be considered as incremental traffic.

## Base Case of Continued Operation

Under continued operation, railroad cost savings are primarily the result of faster speed, increased car payload, and reduced track maintenance cost. Faster speeds reduce crew, car, locomotive, and other time-related train costs for all classes of traffic: origin, destination, and through. If heavier rail cars are used after an investment, then fewer car-miles, train-miles, and locomotive-miles will be needed to move the same net tons over the line. However, heavier cars may result in higher track maintenance costs, which must be reflected in the net calculation.

Normal track maintenance cost may drop after rehabilitation because of the elimination of deferred maintenance. Deferred maintenance is an economic cost that must be considered, even though the railroad is not expending funds for this maintenance. Deferred maintenance is a cost that eventually must be covered if a line is to remain in service. Track rehabilitation projects that eliminate deferred maintenance usually result in lower spot maintenance and inspection costs.

## Abandonment Base Case

**Shipper Cost Savings**

Changes in post-abandonment shipping costs reflect: (1) trucking costs from stations on the abandoned branch line to a nearby rail line (e.g., a mainline), and (2) transfer or transloading costs at the mainline facility. If the rail rate from the mainline station to common destinations is less than the rail rate from branch-line stations, these savings may partly or wholly offset the increased shipping cost.

**Railroad Income Gains**

Net railroad income is a transportation efficiency gain attributable to the reduced operating and maintenance cost of a line after an investment is made. When the base case is abandonment, the net income derived from a line will be lost without public investment. The retained income may help preserve railroad jobs in North Dakota and generate economic benefits. In the long run, public investment provides economic incentives and cash flows that may induce railroads to reinvest in branch lines, perform long-run maintenance, or increase service levels. If trucker profits will be lost because of a railroad investment, these losses must be considered as offsets.

However, offsets are not applicable to private trucking or custom hauling in farmer-owned vehicles.

**Shipper Profit on New Production**

In some cases, shipper gains or profits from incremental production may be the primary benefits of rehabilitation. Profits are usually proprietary information. Businesses may be reluctant to provide this information, even though it can be treated as confidential by the NDDOT.

**Impacts on Through Traffic**

The segment being analyzed may be part of a through route between two terminals or gateways. If the segment is abandoned, the through traffic must move over a longer, circuitous route. In this case, the primary impacts of abandonment are the incremental car, locomotive, and train costs incurred by the through traffic, which must circumvent the abandoned segment. A similar situation can result from line bifurcation—in which the middle segment of a local line is abandoned.

**Highway Impacts**

If an investment will change the distribution of traffic between railroads and trucks, then highway impacts are analyzed. The highway impact procedure is based on functions developed by the American Association of State Highway and Transportation Officials (AASHTO). The highway model includes many of the same equations and parameters used in pavement design. However, the model is used to estimate the incremental resurfacing costs of pavements, rather than the actual construction costs. Additional truck revenues received by highway agencies are used to offset projected cost increases.

**Highway Impact Procedure**

A highway impact analysis is required when the null alternative is abandonment. Two of the initial steps in a highway impact analysis are identification of post-abandonment truck routes from branch-line stations to railroad main lines and truck configurations used to transport diverted traffic.

The preferred truck type will depend on the commodity, local highway designs and conditions, and the economics of different truck types. In some cases, more than one truck configuration may be used.

The highway impact procedure is based on an analytical function developed by the American Association of State Highway and Transportation Officials (AASHTO), which was later modified by FHWA for use in the Highway Performance Monitoring System (HPMS). FHWA and many states use HPMS to estimate highway rehabilitation and restoration needs.

The highway model includes many of the same equations and parameters used in pavement design. However, the application is reversed. In pavement design, the question is: given a projected truck traffic level, what structural design is needed to ensure pavement performance for the desired period (e.g., 15 years). In pavement deterioration analysis, the question is: given an existing highway with a known structural rating, how will additional truck traffic – beyond the level expected in the design stage – affect the performance period, and thus affect the annualized resurfacing and reconstruction costs?

The effects of different truck axle configurations on pavements are estimated by converting all axle loads to equivalent single-axle loads or ESALs. An ESAL represents the equivalent pavement damage that would be caused by the passage of an 18,000-pound single axle over a pavement section. For example, an axle with an ESAL factor of 1.2 inflicts 1.2 times the damage of a single 18,000-pound axle. The ESAL factor of an axle group will depend on the type of axle (single, tandem, or tridem), the load on the axle in thousands of pounds (kilo-pounds or *kips*), the type of pavement section (flexible or rigid), and the terminal serviceability rating of the pavement ($p_t$).[50]

[50]The terminal serviceability rating is the value at which a pavement is expected to be resurfaced or reconstructed ($p_o$).

Figure 1 illustrates the impacts of single axle loads on a medium strength flexible pavement with a terminal serviceability of 2.5, which is typical of a rural principal arterial highway. The chart illustrates several relationships. First, a 16,000-pound single-axle load followed by a 20,000-pound single-axle load generates a total of 2.115 ESALs as compared to two ESALs for the passage of two 18,000-pound single axles. In essence, load distribution among axles is important in pavement impact analysis. Second, an increase in a single-axle load from 18,000 to 22,000 pounds more than doubles the pavement impact. In general, the ESAL factor for a given type of axle increases with the fourth power of the axle load. Consequently, even modest overloads (e.g., 22,000 pound on a single axle) can significantly increase pavement damage.

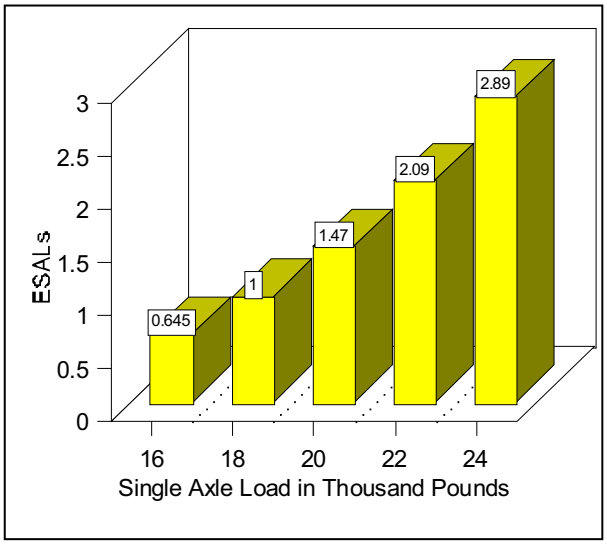



**Figure E.1.** Relative Pavement Impacts of Single-Axle Loads on a Flexible Pavement – Source: Computed from AASHTO Axle Load Equivalency Formulas [Values Reflect Terminal Serviceability of 2.5]

Figure 2 illustrates the impacts of a tandem axle set on the same type of pavement. As the chart shows, 34,000 pounds on a tandem axle generates only 1.11 times the impact of 18,000 pounds on a single axle.

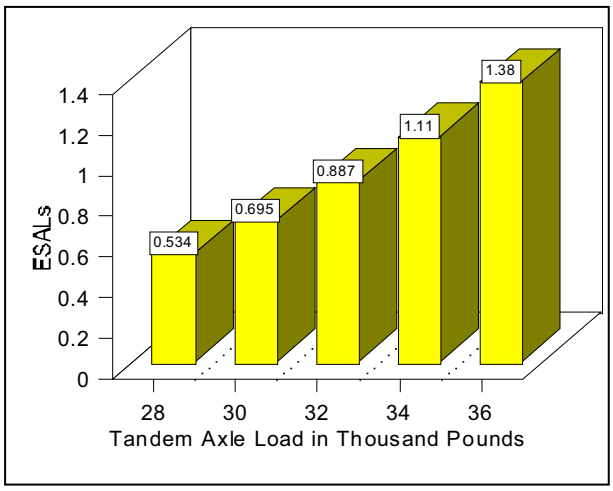



**Figure E.2.** Relative Pavement Impacts of Tandem-Axle Loads on a Flexible Pavement – Source: Computed from AASHTO Axle Load Equivalency Formulas [Values Reflect Terminal Serviceability of 2.5]

AASHTO's ESAL factors are conservative estimates of pavement damage. The factors are based on road test data from the 1960s, which reflect the use of dual, bias (ply) tires with pressures of 75 to 80 psi. Today, most commercial trucks use radial tires inflated to 100 psi or greater. In some cases, "super single" tires are used instead of dual tires. Research suggests that increasing the tire pressure from 75 to 100 psi increases the pavement impact of an 18,000 pound single-axle load by approximately 16 percent. [51] Research also suggests that using single tires instead of dual tires can increase the pavement impact of an 18,000-pound single axle

[51] Transportation Research Board (TRB), Truck Weight Limits, Special Report 225, 1990.

load by 31 to 132 percent.[52] In short, the use of super-single tires and high inflation pressures result in much greater reductions in pavement life than AASHTO ESAL factors suggest.[53]

The highway impact model and computational process are described in a technical appendix to Chapter 5 of Part 1. Two intermediate outputs are especially important to an impact analysis:

1. the unit costs per ESAL-mile of travel
2. the incremental ESAL-miles of travel over impacted highway sections. In the final step of the process, the annual avoidable cost of each impacted highway section is computed by multiplying the incremental ESAL-miles by the appropriate unit cost.

[52] Ibid. The range of impacts depends on the "wander" or lateral movement of truck tires. Wander has a positive effect on pavement life for a given axle load and tire because the load is not concentrated on a linear path or area of pavement. The 31 percent increase corresponds to a wander standard deviation of 8 inches, while the 132 percent increase corresponds to zero wander.

[53] The effects of modern tire pressures on pavement lives are taken into account during a rail line analysis through use of an adjustment factor. However, the effects of single tires are not considered.

# APPENDIX F:

# LOCAL RAIL FREIGHT ASSISTANCE GUIDELINES

# 49 UNITED STATES CODE, SUBTITLE V - RAIL PROGRAMS PART B - ASSISTANCE CHAPTER 221 - LOCAL RAIL FREIGHT ASSISTANCE

## § 22101. Financial assistance for State projects

(a) General. - The Secretary of Transportation shall provide financial assistance to a State, as provided under this chapter, for a rail freight assistance project of the State when a rail carrier subject to part A of subtitle IV of this title maintains a rail line in the State. The assistance is for the cost of -

(1) acquiring, in any way the State considers appropriate, an interest in a rail line or rail property to maintain existing, or to provide future, rail freight transportation, but only if the Surface Transportation Board has authorized, or exempted from the requirements of that authorization, the abandonment of, or the discontinuance of rail transportation on, the rail line related to the project;

(2) improving and rehabilitating rail property on a rail line to the extent necessary to allow adequate and efficient rail freight transportation on the line, but only if the rail carrier certifies that the rail line related to the project carried not more than 5,000,000 gross ton-miles of freight a mile in the prior year; and

(3) building rail or rail-related facilities (including new connections between at least 2 existing rail lines, intermodal freight terminals, sidings, bridges, and relocation of existing lines) to improve the quality and efficiency of the rail freight transportation, but only if the rail carrier certifies that the rail line related to the project carried not more than 5,000,000 gross ton-miles of freight a mile in the prior year.

(b) Calculating Cost-Benefit Ratio. - The Secretary shall establish a methodology for calculating the ratio of benefits to costs of projects proposed under this chapter. In establishing the methodology, the Secretary shall consider the need for equitable treatment of different regions of the United States and different commodities transported by rail. The establishment of the methodology is committed to the discretion of the Secretary.

(c) Conditions. - (1) Assistance for a project shall be provided under this chapter only if -

(A) a rail carrier certifies that the rail line related to the project carried more than 20 carloads a mile during the most recent year during which transportation was provided by the carrier on the line; and

(B) the ratio of benefits to costs for the project, as calculated using the methodology established under subsection (b) of this section, is more than 1.0. (2) If the rail carrier that provided the transportation on the rail line is no longer in existence, the applicant for the project shall provide the information required by the certification under paragraph (1)(A) of this subsection in the way the Secretary prescribes. (3) The Secretary may waive the requirement of paragraph (1)(A) or (2) of this subsection if the Secretary -

(A) decides that the rail line has contractual guarantees of at least 40 carloads a mile for each of the first 2 years of operation of the proposed project; and

(B) finds that there is a reasonable expectation that the contractual guarantees will be fulfilled.

(d) Limitations on Amounts. - A State may not receive more than 15 percent of the amounts provided in a fiscal year under this chapter. Not more than 20 percent of the amounts

available under this chapter may be provided in a fiscal year for any one project.

## § 22102. Eligibility

A State is eligible to receive financial assistance under this chapter only when the State complies with regulations the Secretary of Transportation prescribes under this chapter and the Secretary decides that -

(1) the State has an adequate plan for rail transportation in the State and a suitable process for updating, revising, and modifying the plan;
(2) the State plan is administered or coordinated by a designated State authority and provides for a fair distribution of resources;
(3) the State authority -
(A) is authorized to develop, promote, supervise, and support safe, adequate, and efficient rail transportation;
(B) employs or will employ sufficient qualified and trained personnel;
(C) maintains or will maintain adequate programs of investigation, research, promotion, and development with opportunity for public participation; and
(D) is designated and directed to take all practicable steps (by itself or with other State authorities) to improve rail transportation safety and reduce energy use and pollution related to transportation; and
(4) the State has ensured that it maintains or will maintain adequate procedures for financial control, accounting, and performance evaluation for the proper use of assistance provided by the United States Government.

## § 22103. Applications

(a) Filing. - A State must file an application with the Secretary of Transportation for financial assistance for a project described under section 22101(a) of this title not later than January 1 of the fiscal year for which amounts have been appropriated. However, for a fiscal year for which the authorization of appropriations for assistance under this chapter has not been enacted by the first day of the fiscal year, the State must file the application not later than 90 days after the date of enactment of a law authorizing the appropriations for that fiscal year. The Secretary shall prescribe the form of the application.
(b) Considerations. - In considering an application under this subsection, the Secretary shall consider the following:
(1) the percentage of rail lines that rail carriers have identified to the Surface Transportation Board for abandonment or potential abandonment in the State.
(2) the likelihood of future abandonments in the State.
(3) the ratio of benefits to costs for a proposed project calculated using the methodology established under section 22101(b) of this title.
(4) the likelihood that the rail line will continue operating with assistance.
(5) the impact of rail bankruptcies, rail restructuring, and rail mergers on the State.

## § 22104. State rail plan financing

(a) Entitlement and Uses. - On the first day of each fiscal year, each State is entitled to $36,000 of the amounts made available under section 22108 of this title during that fiscal year to be used -

(1) to establish, update, revise, and modify the State plan required by section 22102 of this title; or

(2) to carry out projects described in section 22101(a)(1), (2), or (3) of this title, as designated by the State, if those projects meet the requirements of section 22101(c)(1)(B) of this title.

(b) Applications. - Each State must apply for amounts under this section not later than the first day of the fiscal year for which the amounts are available. However, for any fiscal year for which the authorization of appropriations for financial assistance under this chapter has not been enacted by the first day of the fiscal year, the State must apply for amounts under this section not later than 60 days after the date of enactment of a law authorizing the appropriations for that fiscal year. Not later than 60 days after receiving an application, the Secretary of Transportation shall consider the application and notify the State of the approval or disapproval of the application.

(c) Availability of Amounts. - Amounts provided under this section remain available to a State for obligation for the first 3 months after the end of the fiscal year for which the amounts were made available. Amounts not applied for under this section or that remain unobligated after the first 3 months after the end of the fiscal year for which the amounts were made available are available to the Secretary for projects meeting the requirements of this chapter.

## § 22105. Sharing project costs

(a) General. - (1) The United States Government's share of the costs of financial assistance for a project under this chapter is 50 percent, except that for assistance provided under section 22101(a)(2) of this title, the Government's share is 70 percent. The State may pay its share of the costs in cash or through the following benefits, to the extent that the benefits otherwise would not be provided:

(A) forgiveness of taxes imposed on a rail carrier or its property.

(B) real and tangible personal property (provided by the State or a person for the State) necessary for the safe and efficient operation of rail freight transportation.

(C) track rights secured by the State for a rail carrier.

(D) the cash equivalent of State salaries for State employees working on the State project, except overhead and general administrative costs. (2) A State may pay more than its required percentage share of the costs of a project under this chapter. When a State, or a person acting for a State, pays more than the State share of the costs of its projects during a fiscal year, the excess amount shall be applied to the State share for the costs of the State projects for later fiscal years.

(b) Agreements To Combine Amounts. - States may agree to combine any part of the amounts made available under this chapter to carry out a project that is eligible for assistance under this chapter when -

(1) the project will benefit each State making the agreement; and

(2) the agreement is not a violation of State law.

## § 22106. Limitations on financial assistance

(a) Grants and Loans. - A State shall use financial assistance for projects under this chapter to make a grant or lend money to the owner of rail property, or a rail carrier providing rail transportation, related to a project being assisted. The State shall decide on the financial terms of the grant or loan, except that the time for making grant advances shall comply with regulations of the Secretary of the Treasury.

(b) Holding and Use of Government's Share. - The State shall place the United States Government's share of money that is repaid in an interest-bearing account. However, the Secretary of Transportation may allow a borrower to place that money, for the benefit of the State, in a bank designated by the Secretary of the Treasury under section 10 of the Act of June 11, 1942 (12 U.S.C. 265). The State shall use the money and accumulated interest to make other grants and loans under this chapter.

(c) Payment of Unused Money and Accumulated Interest. - The State may pay the Secretary of Transportation the Government's share of unused money and accumulated interest at any time. However, the State must pay the unused money and accumulated interest to the Secretary when the State ends its participation under this chapter.

(d) Encouraging Participation. - To the maximum extent possible, the State shall encourage

the participation of shippers, rail carriers, and local communities in paying the State share of assistance costs.

(e) Retention of Contingent Interest. - Each State shall retain a contingent interest (redeemable preference shares) for the Government's share of amounts in a rail line receiving assistance under this chapter. The State may collect its share of the amounts used for the rail line if -

(1) an application for abandonment of the rail line is filed under chapter 109 of this title; or

(2) the rail line is sold or disposed of after it has received assistance under this chapter.

# APPENDIX G:

# NORTH DAKOTA DEPARTMENT OF TRANSPORTATION FREIGHT RAILROAD IMPROVEMENT PROGRAM APPLICATION INSTRUCTIONS - 2005

# PART I

## SECTION 1.0 INTRODUCTION

The Freight Railroad Improvement Program (FRIP) document is comprised of two parts. Part I describes the process and information required when applying for financial assistance under the program. Part II contains the description of the process used by the department to rate and rank proposed projects for funding, and to determine the amount and terms for assistance. It also contains a description of several obligations imposed by the acceptance of assistance.

It is recommended that a potential applicant review both Part I and Part II prior to initiating the application process.

## SECTION 2.0 ELIGIBLE APPLICANTS

Eligible applicants include a county, city, railroad company, or a current or potential user of freight railroad service.

## SECTION 3.0 ELIGIBLE PROJECTS

An eligible project is generally one in which the line related to the project has carried less than 5 million gross ton miles of freight per mile in the year previous to the year of application and which accomplishes any of the following: rehabilitates a segment of rail line, results in economic development, improves transportation efficiency, promotes safety, promotes the viability of the statewide system of freight rail service, assists intermodal freight movement, or provides industry access to the national railroad system. If the Director determines that a significant public interest in the project exists he may waive the 5 million gross ton miles requirement.

# SECTION 4.0 APPLICATION CONTENT AND PROCESS

## SUB 4.1 PROJECT PROPOSAL FILING

Project proposals must be received by **December 15** of the year prior to the project. (Example: A project to be implemented in 2006 must be submitted by December 15, 2005) Applications received after December 15 will be considered for the subsequent year's program, at NDDOT's discretion. The initial step in applying for assistance is the filing of a written project proposal with the North Dakota Department of Transportation (NDDOT) addressed as follows:

Director
North Dakota Department of Transportation
608 East Boulevard Avenue
Bismarck, ND 58505-0700

The proposal should contain the information listed in 4.1.1 through 4.1.6 below in a type written (word processor) format.

4.1.1 Identification of Parties and Projects

(a) Name and address of applicant, working contact name, address and telephone number.

(b) Name of the railroad party to the project and the address and telephone number of a railroad company contact person.

(c) Name of the shipper (if any) party to the project and the address and telephone number of a contact person.

(d) A narrative explanation of purpose, need and public benefits. Some of the elements which may assist in explaining a project's purpose and need may include: capacity, safety, system linkage, system deficiencies, modal interrelationships, social demands or economic development. The section should also describe and justify any negative impacts associated with the project.

(e) A narrative explanation/description of the proposed project including but not limited to:

(1) Physical measurements. (Linear, area, etc.)
(2) Physical location. (Address, mileposts, street crossings, etc.)
(3) Major material specifications. (Weight of rail, type of ballast, grade of tie, etc.)

(4) Map/sketch of project design and location.
(5) Such other information as deemed useful by applicant for supporting and understanding the project concept and purpose.
(6) Number of shippers served and/or affected, and general makeup of commodities handled.

(f) A narrative explanation/description of the alternative to be pursued should the assistance not be awarded and the consequences thereof (postpone, abandon, reduce service by x amount, forgo x amount of revenue or cost savings, etc.). Please include objective measures such as numbers, dates, quantities, etc.

4.1.2 Estimate of Project Cost and Performance Method

(a) A line item breakout of estimated direct project costs at least to the level of:

(1) Materials
(2) Labor
(3) A description of force account work and by principal task for contract work.
(4) Total project cost.

(b) In order to improve the coverage of limited program resources indirect costs such as administration-and overhead and profit on force account work are not eligible for assistance.

(c) A description of and brief rationale for the method or methods proposed for accomplishing major project work tasks. (e.g., tie replacement by force account, surfacing by contractor.)

4.1.3 Proposed Project Financing

(a) Identify the dollar amount of assistance being requested. See Part II, Section 2.0 for an explanation of how the form of assistance is determined.

(b) Identify the source of all non-state assistance related to the project.

4.1.4 Intended Benefit and Cost Items

Provide a list or description of the type or category of benefits and costs assumed by applicant to be associated with this project. It is not necessary to provide quantified measures of these benefits and costs at this time. Quantification matters will be determined during the application conference(s). Section 4.2.1(b) includes a partial list of possible measures.

4.1.5 Intended Environmental and Economic Enhancement Items

Provide a list or description of any environmental or economic enhancement outcomes projected by the applicant to result from the project if the project is to be evaluated on these two criteria. It is not necessary to provide quantified measures of these outcomes at this time. Quantification matters will be determined during the application conference(s).

4.1.6 Public Involvement Process

The applicant shall solicit public input for each project prior to submitting applications. Solicitation of public input may, at the applicant's discretion, include any of the following: holding a public hearing, providing opportunity for public hearing, or soliciting written comments.

Notification to the public of the request for input shall be accomplished by placing a corresponding legal notice in the official county newspaper in the county in which the improvement is proposed to be made. The ad shall contain a description of type and location of the improvement, reason for the hearing (i.e. Rail rehabilitation project etc...), a description to who or where comments should be sent (address and telephone number), and comment or public hearing request deadline dates. Advertisements shall be published at least 21 days before the date of a hearing. Ten days must be allowed for written comments following a hearing or publication of request for written comments. The applicant shall notify NDDOT of the time and place of any public hearings that are to be held 10 days prior to the hearing.

If a project qualifies, NDDOT will hold or at least provide an opportunity for public hearing. At a minimum the NDDOT shall place a corresponding legal notice in the official county newspaper in the county in which the improvement is proposed to be made. The ad shall contain a description of type and location of the improvement, reason for the hearing, a description to whom or where comments should be sent, and comment or public hearing request deadline dates.

In the event of a public hearing, all comments are recorded verbatim and shall be included in the application. All comments will be considered in the final decision.

## SUB 4.2 APPLICATION CONFERENCE

Following the submittal deadline (December 15), NDDOT staff will arrange and hold a conference with the applicant and any other entities party to the project to review the application and determine if the requirements have been met. There may be a need for additional conferences relating to data.

4.2.1 Data for Transportation Efficiency Analysis

(a) The most influential criterion in determining project qualification and rank is the ratio of transportation efficiency benefit to project cost. The application conference will establish the appropriate data to be submitted for NDDOT to calculate this ratio. NDDOT may employ the services of others in analyzing and calculating the Benefit - Cost ratio.

(b) The following list is representative but not exhaustive of the type of data that may be required:

(1) The general question is what amount of quantifiable change expressed in dollars will result in these areas from accomplishing the project.

- Maintenance of Way (MOW) costs
- Locomotive costs and Fuel consumption costs
- Freight rate/unit
- Number of carloads
- Lading handling costs
- Car hire and/or car investment costs
- Maintenance of Equipment (MOE) costs
- Train crew costs
- Product/lading shrinkage
- Derailment costs

(2) Other statistical information pertinent to this analysis.

- Project impact on market penetration (intermodal, customer territory, service frequency).
- Average car capacity in same units used in freight rates above.
- Net liquidation value of in-place track assets.

4.2.2 Data for Establishing Project's Net Operating Revenue

A fundamental factor for determining the assistance amount to be allowed is the net revenue accruing to the railroad or, if applicable, to the industry, or both, after the completion of the project. Data necessary to support the figure provided by the applicant will be required (See Part II for detail).

## SUB 4.3 QUALIFICATION AND RANKING DATA FILING

4.3.1 The data required for project qualification and ranking determined through the application conference or conferences shall be filed by applicant with NDDOT.

4.3.2 All project proposals will be reviewed for qualification and qualified proposals will be ranked for funding priority. (See Part II, Section 1.2 for qualification and ranking criteria and scoring procedures.) All applicants will be informed of their project proposal's ranking. Those project proposals ranking highest and which are

fundable within the resources available are designated as candidate projects and will continue with the application process.

### SUB 4.4 ASSISTANCE FORMATTING DATA FILING

Applicants notified that their project proposal is a candidate project shall file the necessary financial data to determine the cost of capital and net annual operating revenue or for projects generating cost savings rather than operating revenue, the cost savings (See Part II for net revenue and cost of capital calculation detail).

### SUB 4.5 EMERGENCY ASSISTANCE

The department may, at its sole discretion upon application by an eligible applicant, provide assistance under FRIP on a non-competitive basis at any time for a project addressing a (Government) declared emergency situation. The project must meet eligibility qualifications. An emergency project shall deal with replacement of significant infrastructure essential to operation of rail freight service, such as bridge failure, major washout, destruction by fire, and the like. Insurance proceeds must first be dedicated to the project.

## SECTION 5.0 ASSISTANCE AWARD PROCESS

### SUB 5.1 APPLICANT ACCEPTANCE

Within ten (10) working days of the offer of an assistance award, applicant shall in writing accept or reject the award.

### SUB 5.2 AGREEMENT NEGOTIATION EXECUTION

Upon applicant acceptance of the assistance award, negotiations between the responsible parties and NDDOT begin. Within 90 calendar days of the acceptance of the assistance award, an assistance agreement is executed among the parties and the assistance award is final. Unless otherwise agreed by NDDOT the offer of an assistance award expires and is withdrawn if an assistance agreement is not executed within 90 days of the award acceptance by the applicant.

## SECTION 2.0 ASSISTANCE FORM AND AMOUNT

### SUB 2.1 POLICIES AFFECTING ASSISTANCE AMOUNT

2.1.1 The measure of public interest, for program purposes, is determined by the project's qualification and ranking on the criteria set forth under Part II, Section 1.0 herein. The measure of the applicant's legitimate economic concern is the applicant's net revenue from the project on its share of project cost equaling its cost of capital plus a reasonable return on the use of that capital.

2.1.2 Loan assistance is provided at an interest rate calculated at ½ of the Prime rate, but not less than 3%.

2.1.3 Rehabilitation projects will be financed on a 70% - 30% match, with the 30% match coming from non-state sources, in general the applicant. New construction projects will be financed on a 50% - 50% basis (e.g., Elevator and Industrial sidings).

2.1.4 The loan term is generally 10 years, with payment deferred the first two years. Interest accrues during the deferral period. The loan is repaid in eight annual installments, beginning the third year of the loan. The interest accrued during the deferral period is due with the first loan payment.

## SECTION 3.0 KEY ASSISTANCE AGREEMENT TERMS

### SUB 3.1 LIST

3.1.1 The applicant must, to the extent allowed under North Dakota state law, agree to indemnify, save, and hold harmless the State of North Dakota, NDDOT, it's officers, agents, employees, and members, from any and all claims, demands, actions, or cause of action arising out of the negligent acts, errors, or omissions of the Contractor, or contractor's employees or agents, in the performance of all contracts, or matters incidental thereto.

3.1.2 The railroad or other applicant must agree to maintain the line or project facility for the duration of the assistance agreement at or above FRA Class 2 Track Safety Standard service level. Termination of service will make the full assistance amount due and payable plus an amount equal to the interest rate in the agreement applied to the full assistance amount from the effective date of the assistance agreement to date of termination.

3.1.3 Interest charges begin upon first draw of assistance funds and are calculated on a fixed regular schedule.

3.1.4 Rehabilitation and construction material and performance specifications shall conform to American Railway Engineering Association standards and practices.

3.1.5 Project cost's may not be incurred on any project before an agreement is executed between the NDDOT and the applicant.

3.1.6 If Railroad force account is not used, the competitive sealed bidding process shall be used for all approved FRIP projects including formal advertising allowing a minimum of twenty-one days for the receipt of bids.

3.1.7 The progress billing method will be permitted with 10% retainage by the State. Final billings must include a statement of total actual costs and will be subject to a detailed audit. Final billings must be submitted to the State within three months after project completion.

3.1.8 The applicant shall, upon any sale or disposition of all or any portion of the subject line or the filing of an application for abandonment of all or any portion of the subject line at any time during the term of agreement repay to the State, the full amount of the State's share of the improvements made to the subject line.

# PART II

## SECTION 1.0 PROJECT SELECTION

### SUB 1.1 PROJECT SELECTION POLICIES

1.1.1 Purpose of Qualification and Ranking: The department has determined that proposed projects must generate improvements in transportation efficiency and may also generate broad public benefit. In order to evaluate proposed projects, six criteria are used. Proposed projects are rated on each criterion. The rating system generates a point score for the purpose of establishing project qualification for funding and the rank of individual proposed projects from most to least points scored.

1.1.2 Use of Qualification and Ranking: Project applications will be assigned a score based upon the estimated impacts of the project on North Dakota's rail system. Detailed information on scoring procedures is given below. To qualify for funding, a project must meet the minimum criteria of a primary BCR of greater than 1.0. Qualified projects are then ranked by total point score. The rankings are subsequently used to determine which applicants receive offers of assistance. Offers are made, at the Directors discretion, to applicants in rank order until program resources are no longer able to cover estimated project costs.

1.1.3 Relation of Rank to Funding: The rank of a project determines two things: if project assistance is justified, and if qualified, what priority the project has. The ranking process has no influence on the format of the assistance award package offered. All assistance awards will generally be in the form of a low interest loan**.**

It is possible for a project to be funded outside of rank order. If a lower ranking project is able to be funded within remaining resource limits while a higher ranking project would exceed those limits, the lower ranked project may be funded if the applicant for the higher ranking project is unable to accept only the portion of its request able to be funded within resource limits.

If two or more qualified projects attain the identical ranking score, the benefit/cost ratio will be the factor determining final ranking.

1.1.4 Directors Authority: On a case by case basis the Director will have the authority to modify payback criteria and/or funding limits.

## SUB 1.2 PROJECT SELECTION CRITERIA

1.2.1 Transportation Efficiency Benefit/Cost Ratio:

(a) Purpose: The purpose of this criterion is to afford a measure of the economic soundness of a public investment in the project.

(b) Description: The total B/C consists of three levels: (1) primary efficiency benefits, (2) transportation efficiency benefits including highway impacts, and (3) total economic benefits including secondary economic impacts quantified with the REMI model. In order for a project to qualify for further evaluation, it must have a primary efficiency B/C ratio of 1.0 or greater. This is the minimum economic efficiency threshold used by federal and state agencies. However, the total B/C ratio is used in comparing projects that have passed a minimum threshold test.

(c) Scoring: The benefit-cost ratio is included as a numeric score. To remain consistent with a multicriteria scoring system, the B/C ratio cannot increase without bound. Thus, it is capped at 25. A B/C ratio above 25 is a rare occurrence. Therefore, this cap should have little, if any effect on scoring outcomes.

***MAXIMUM OF 25 POINTS***

1.2.2 **Carloads per Mile**:

(a) Purpose: The purpose of this criterion is to represent the scale of the total project benefits. Traffic density is a proxy for the strategic significance of a line, and the likelihood of long-run survival of the line, and the continuation of benefits beyond the analysis period.

(b) Description: Rail carloads are totaled over the last year or are averaged over three years. All carloads may be included even if transported by a railroad not party to the project proposal. Any bridge or overhead carloads included in the total shall also be shown separately. If multi-platform articulated cars are used, they are treated as single or multiple cars according to how they are treated in the tariff or contract under which they move. Excluded are carloads that have been used in a prior project's carload count of which are now rerouted over the proposed project unless the reroute can be demonstrated to be independent of project considerations. The carloads of the past three years and the projections for the next two years may be used. Absent valid projections, only the average of the past three years is used. The carload data and evidence of its validity is provided by the applicant during the application conference(s).

(c) Scoring: Points are awarded on the basis of carloads per mile as shown in the table below. The points awarded increase as the carloads per mile approach 120. The points are awarded in this manner to reflect the lesser impact on the economy on very light density lines.

| *Carloads/Mile 3 Yr. Average* | *Points* |
|---|---|
| **< 12** | **0** |
| **12 - 20** | **1** |
| **21 - 35** | **2** |
| **36 - 80** | **3** |
| **81 - 120** | **4** |
| **> 120** | **5** |

***MAXIMUM OF 5 POINTS***

1.2.3 System Connectivity:

(a) Purpose: The purpose of this criterion is to afford a means to reflect the value a project may present in serving a distinct system function even though traffic origin or destination functions may be minimal or absent.

(b) Description: System connectivity is present when the project specifically provides for the entire sole connection of two distinct through route line segments of the applicant's system, or the system's sole interchange connection with another railroad.

(c) Scoring: System connectivity points are awarded as follows.

| **Description** | **Score or Range** |
|---|---|
| High Connectivity | 3 |
| Moderate Connectivity | 2 |
| Low Connectivity | 1 |
| Nonexistent | 0 |

***MAXIMUM OF 3 POINTS***

| Score | Example of Qualifying Project |
|---|---|
| **3** | Line improvement that rehabilitates a segment that connects two high volume branch lines and prevents circuitous routing |
| **2** | Line improvement to ensure that a segment of track remains continuous |
| **1** | Low usage gateway between branch lines |
| **0** | Stub Line or Siding |

1.2.4 Enhancing North Dakota's Economy**:**

(a) Purpose**:** The purpose of this criterion is to afford a means to reflect in the awarding of rail assistance funds aspects of the project that offer economic benefits that may not be captured under the benefit/cost and REMI analysis. A qualifying scenario includes an exogenous economic impact, that is, non-measurable in the context of the benefit-cost criteria.

(b) Description**:** Points are awarded under this criterion on the basis of the department's finding the project:

(1) Will address an unusual North Dakota job gain or loss situation.
(2) Contains an element of urgency/timeliness significant to its ability to deliver long-term benefits.
(3) Improves viability of businesses served by the operator.
(4) Improves the attractiveness of North Dakota for new business.
(5) Serves a developed industrial park (streets, sewer, and water in place).

(c) Scoring**:** Enhancing North Dakota's economy points are awarded as follows:

| Description | Score or Range |
|---|---|
| High Exogenous Impact | 3 |
| Moderate Exogenous Impact | 2 |
| Low Exogenous Impact | 1 |
| Nonexistent | 0 |

***MAXIMUM OF 3 POINTS***

| Score | Example of Qualifying Project |
|---|---|
| **3** | Project that provides rail access to an industrial park, which raises attractiveness for firms to locate there |
| **2** | Project that provides rail access to an industrial park, which may induce existing firms to expand |
| **1** | Project that maintains infrastructure which may lead to firm retention |
| **0** | Project that does not exogenous potential economic impact |

1.2.5 Safety and Security:

(a) Purpose: The purpose of this criterion is to provide a means to reflect in the awarding of rail assistance funds aspects of the project that offer unique benefits to railroad safety or enhance the state's security. A qualifying scenario would include a safety or security impact that is not quantifiable, and therefore not included in the Benefit-Cost analysis.

(b) Description**:** Points are awarded under this criterion on the basis of the department's finding the project will result in:

(1) Reduction in potential derailments.
(2) Reduction of hazards to railroad personnel and contractors.
(3) Shift of shipments of hazardous materials from the highway system
to the railroad network that would reduce accident exposure.
(4) Grade crossing safety enhancements.
(5) Increase of security of yards, containers, tank cars, and other equipment and facilities.
(6) Security enhancements to border crossings, inspection locations, bridges and potential choke points.

(c) Scoring: Safety and Security points are awarded as follows:

| Description | Score or Range |
|---|---|
| High Safety and Security Impact | 3 |
| Moderate Safety and Security Impact | 2 |
| Low Safety and Security Impact | 1 |
| Nonexistent | 0 |

***MAXIMUM OF 3 POINTS***

| Score | Example of Qualifying Project |
|---|---|
| **3** | Project that reduces hazmat transportation risks by shifting traffic from high-risk highway routes, reduces the risks of hazmat accidents at grade crossings, or reduces the risks of train derailments involving hazmat cargo |
| **2** | Project that generally reduces highway accident risks by shifting freight traffic from highway routes to rail lines; or, which reduces the risks of train derailments, even if the trains are not transporting hazmat materials |
| **1** | Project that improves the safety and security of railroad lines or yards by eliminating hazards to railroad workers or the public, including reductions in trespassing |
| **0** | Project that does not positively impact safety or security |

1.2.6 Environmental and Community Effects:

(a) Purpose: The purpose of this criterion is to provide a means to reflect in the awarding of rail assistance funds aspects of the project that offer unique benefits related to environmental and community impacts. A qualifying scenario would include an environmental or community impact that is not quantifiable, and therefore not included in the benefit-cost analysis.

(b) Description: Points are awarded under this criterion on the basis of the department's finding the project:

(1) Will reduce negative community impacts of rail transportation such as noise, traffic interference, or blocked crossings.
(2) Will reduce environmental impacts aside from efficiency gains due to modal shift.

(c) Scoring: Environmental and Community Effects points are awarded as follows:

| Description | Score or Range |
|---|---|
| High Benefit Level | 3 |
| Moderate Benefit Level | 2 |
| Low Benefit Level | 1 |
| Nonexistent | 0 |

***MAXIMUM OF 3 POINTS***

| Score | Example of Qualifying Project |
|---|---|
| **3** | Rail relocation project which eliminates noise and traffic interference or a implementation of a quiet zone |
| **2** | Rail line construction that provides rail access to an industrial park, thus allowing initial traffic to move out by rail rather than truck, thereby limiting emissions |
| **1** | Rail rehabilitation through wetlands which corrects prior environmental impacts |
| **0** | Rail project which does not generate environmental or community benefits |

1.2.7 Scoring *and Weighting Method:*

(a) Purpose: The purpose of weighting the criteria is to appropriately assess the importance of each criterion to determine the total overall impact of the project.

(b) Description: The weights assigned were determined by a committee of stakeholders in North Dakota's rail industry. Each criterion is assigned with a weight which reflects the importance of the criterion to the committee.

(c) Weighting: The scoring and weighting method is implemented as follows:

| Criterion | Minimum Score | Maximum Score | Weight | Total |
|---|---|---|---|---|
| Total B/C ratio | 0 | 25 | 1.12 | 28 |
| Carloads per mile | 0 | 5 | 3.6 | 18 |
| System connectivity | 0 | 3 | 6 | 18 |
| Economic development | 0 | 3 | 4.6 | 14 |
| Safety/Security | 0 | 3 | 4 | 12 |
| Environmental/Community | 0 | 3 | 3.3 | 10 |
| **Weighted** | | | | 100 |

# APPENDIX H:

# RAIL REHABILITATION PROJECTS

# NORTH DAKOTA LRSA/LRFA

## *Rail Rehabilitation Projects*

### Revolving Loan Account Activity

| Year | RR | Project | Federal Funds | Matching Funds | Total Cost |
|---|---|---|---|---|---|
| 1982 | BN | New Rockford to Maddock 36.6 miles of rail rehab on a line with demonstrated economic potential that is essential to other segments of the state's rail network. | $1,450,236.53 | $765,079.29 | $2,215,315.82 |
| | BN | Larimore to Mayville 36.3 miles of rail rehabilitated. This line serves an important social and economic need and has demonstrated potential economic viability beyond the stage of the initial public investment. | $1,106,740.47 | $628,302.00 | $1,735,042.47 |
| 1983 | BN | Edgeley to Lisbon 53.4 mile rail replacement project with 2 phases. The project will insure service to shippers on this profitable line and discourage abandonment. | $861,556.62 | $1,604,908.25 | $2,466,464.87 |
| | CPR | Fordville to Conway is Phase 1 of a 3 phase project from Fordville to the Minnesota State line and Poland. This 35.7 mile project is the first CPR project which lends an opportunity to promote the competitive balance between the BN and CPR. This line is a key link to the Port of Duluth and will insure lasting service to the two connecting lines to the west. | $216,293.00 | $92,697.00 | $308,990.00 |
| 1984 | CPR | Conway to Forest River Phase II | $425,659.00 | $212,822.28 | $638,481.28 |
| 1985 | CPR | Forest River to Poland Phase III | $222,855.00 | $386,882.79 | $609,737.79 |
| 1986 | CPR | Tolley to Russel is phase I of a 2 phase project on the Fordville to Kenmare line which runs through a prime grain producing area of northern North Dakota. This rehabilitation will insure continued service to 18 grain elevators and 18 fertilizer dealers. Phase II of this project will be from Loma to Lankin. | $1,688,855.00 | $1,515,742.74 | $3,204,597.74 |

| Year | RR | Project | Federal Funds | Matching Funds | Total Cost |
|---|---|---|---|---|---|
| 1986 | CPR | Egeland to Loma 19 mile rehab on a line that is in the heart of a primary grain producing area of the state. This project is part of a larger project to rehabilitate the line from the Fordville to Kenmare. | $905,100.00 | $837,436.68 | $1,742,536.68 |
| 1988 | RRVW | Mooreton to Wahpeton 5 miles of rail replacement on a line that serves one of North Dakota' most intensive agricultural producing areas, essential to the RRVW system. | $347,400.00 | $157,800.20 | $505,200.20 |
| | RRVW | Independence to Oakes 15 mile tie and ballast replacement on a primary connecting segment of the RRVW extremely important to the operational integrity of the new short line as well as the communities and shippers served by the line. | $195,660.00 | $126,916.02 | $322,576.02 |
| | RRVW | New Rockford to Carrington 15 miles rehab that serves a highly productive agricultural area of the state and a line segment that bridges the RRVW system providing a route to its main connecting points with the BN at Jamestown and New Rockford | $256,940.00 | $198,703.35 | $455,643.35 |
| 1989 | CPR | Loma to Lankin Phase II of the Tolley to Russell project above. | $1,887,686.62 | $809,008.55 | $2,696,695.17 |
| | RRVW | Mooreton to Wahpeton 40 miles of rehabilitation on a line that serves one of North Dakota' most intensive agricultural producing areas, essential to the RRVW system. | $527,761.25 | $226,183.39 | $753,944.64 |
| 1990 | RRVW | Wyndmere to Barney 4.2 miles of rail relay on the RRVW system in a key agricultural part of the state. | $283,256.30 | $121,395.56 | $404,651.86 |
| 1991 | RRVW | Barney to Mooreton 5 mile rail replacement on a primary section of the RRVW system serving a vital agricultural production area in central North Dakota. | $464,670.00 | $164,720.10 | $629,390.10 |

| Year | RR | Project | Federal Funds | Matching Funds | Total Cost |
|---|---|---|---|---|---|
| 1992 | RRVW | Mooreton to Oakes Junction 6.5 miles of rail replacement on a line that serves one of North Dakota' most intensive agricultural producing areas, essential to the RRVW system. | $515,217.59 | $220,807.54 | $736,025.13 |
| 1993 | RRVW | Chaffee Junction to Chaffee 11.6 miles of rail relay on a principal branch line of the RRVW system supplying service to an important agricultural area of the State. | $338,594.28 | $146,540.40 | $485,134.00 |
| | DMVW | Kulm to Merricourt 10 miles of rail relay on the DMVW. This portion of track is located in south central North Dakota. The line is the principle part of the DMVW system and serves mostly agricultural needs to this area of the State. | $506,101.00 | $216,901.00 | $723,002.00 |
| 1996 | RRVW | Davenport (MP 18.0) to Lisbon (MP 55.0) - 37 miles of tie and ballast replacement and surfacing on RRVW's 4th subdivision | $583,877.00 | $250,233.00 | $834,110.00 |
| | CPR | Calio (MP 455.0) to Bisbee (MP 474.5) - 19.5 mile tie and ballast replacement and surfacing on CP Rail's Bisbee subdivision. | $1,082,813.20 | $464,062.80 | $1,546,876.00 |
| | CPR | Conway (MP 373.0) to Ardoch (MP 375.0) - 2 mile rail relay project on CPR's Devils Lake subdivision | $266,000.00 | $114,000.00 | $380,000.00 |
| | DMVW | Crosby (MP 581.98) to Fortuna (MP 606.0) - 24 mile tie and ballast replacement and surfacing project on DMVW's western subdivision. | $706,490.40 | $302,781.60 | $1,009,272.00 |
| 1997 | RRVW | Carrington (MP 42.5) to New Rockford (MP 58.5) - 16 mile tie and ballast replacement and surfacing project on the RRVW's 7th subdivision | $223,166.58 | $95,642.82 | $318,809.40 |

| Year | RR | Project | Federal Funds | Matching Funds | Total Cost |
|---|---|---|---|---|---|
| 1999 | RRVW | Berlin, ND (MP 97) – New construction of a siding on track in RRVW's 4th Subdivision | $80,982.00 | $80,982.00 | $161,964.00 |
| 2000 | NPR | Ardoch (MP 364.8) to Conway (MP 380.6) – 16 mile rail, tie and ballast replacement on NPR's Devil's Lake Subdivision (Phase I) | $505,396.27 | $216,598.40 | $721,994.67 |
| 2002 | NPR | Ardoch (MP 364.8) to Conway (MP 380.6) – 16 mile rail, tie and ballast replacement on NPR's Devil's Lake Subdivision (Phase I) | $1,505,205.00 | $1,045,989.91 | $2,150,292.85 |
|  | RRVW | Oakes (MP 15.4) to Independence (MP 0.0) – 16 mile rail replacement with tie and ballast upgrades on RRVW's 3rd Subdivision | $2,420,000.00 | $1,037,142.86 | $3,457,142.86 |
| 2005 | NPR | Ardoch (MP 364.8) to Red River Bridge (MP 374.4) – 9.6 mile rail replacement with tie and ballast upgrades on NPR's Devils Lake Subdivision | $1,511,170.00 | $647,644.29 | $2,158,814.29 |
|  |  | **TOTAL** | **$21,085,683.11** | **$12,687924.20** | **$33,372,705.19** |

# NORTH DAKOTA FRIP

## *Rail Rehabilitation Projects*

### Revolving Loan Account Activity

| Year | RR | Project | State Funds | Matching Funds | Total Cost |
|---|---|---|---|---|---|
| 1996 | RRVW | Jamestown (MP 2.0) to Ypsilanti (MP 13.5) – 11.5 mile tie and ballast replacement and surfacing project on RRVW's 6th Subdivision | $221,899 | $95,099 | $316,998 |
| 1997 | DMVW | Crosby (MP 581.8) to Ambrose (MP 591.6) - 9.8 mile rail relay on the DMVW's Western subdivision | $460,596 | $197,398 | $657,994 |
| 2001 | RRVW | Oakes (MP 149.9) to Independence (MP 15.4) – 3 mile rail replacement with tie and ballast upgrades on RRVW's 3rd Subdivision | $644,657 | $276,282 | $920,939 |
| 2001 | RRVW | Oakes Junction (MP 76.5) to Oakes (MP 149.9) – 73.4 mile rail replacement, with tie and ballast upgrades on RRVW's 3rd Subdivision | $569,273 | $243,974 | $813,247 |
| 2005 | Crete Grain | Bernard Siding (MP 130.5 – MP 135.1) – 3.1 mile siding construction and rehabilitation including rail replacement, switch installation, track scale installation, and tie and ballast upgrades | $418,592 | $274,733 | $693,325 |
| 2005 | RRVW | Oakes (MP 134- MP 148) – 2 miles rail replacement with upgrade of ties and ballast to support the Crete Grain Project | $148,860 | $63,797 | $212,657 |
| | | **TOTAL** | $2,463,877 | $1,151,283 | $3,615,160 |

# NORTH DAKOTA LRSA/LRFA

## *Rail Rehabilitation Projects*

### Grant Activity

| Year | RR | Project | Federal Funds | Matching Funds | Total Cost |
|---|---|---|---|---|---|
| 1979 | BN | GRANT Jamestown - St. Hospital to upgrade spur line into the State Hospital to allow coal cars access. This was an effort to conserve energy by converting state institutions to coal for heating | $594,536.28 | $139,612.15 | $734,148.43 |
| 1980 | CPR | GRANT Monango Siding provided service from CPR after Milwaukee Road abandonment to a new consolidated grain terminal insuring future service for Manango, Ellendale, and Fredrick. | $207,627.06 | $51,906.77 | $259,533.83 |
| | CPR | GRANT Fairmont provided essential service from CPR to Cenex bulk fertilizer dealer after loss of service due to Milwaukee Road abandonment. | $13,977.28 | $3,494.32 | $17,471.60 |
| 1981 | Coop | GRANT Gladstone Siding provided essential service from BN to new grain subterminal constructed after loss of service due to Milwaukee Road abandonment. | $335,972.00 | $89,873.03 | $425,845.03 |
| 1993 | FLOOD | Work has been completed system wide on three of the states four railroads to help them overcome the disastrous losses caused by intense rains and flooding during the summer of 1993. | | | |
| | DMVW | GRANT System-wide Flood | $80,541.39 | $14,213.19 | $94,754.58 |
| | RRVW | GRANT System-wide Flood | $133,550.30 | $23,556.70 | $157,107.00 |
| | CPR | GRANT System-wide Flood | $340,000.00 | $88,221.38 | $428,221.38 |

| Year | RR | Project | Federal Funds | Matching Funds | Total Cost |
|---|---|---|---|---|---|
| 1996 | PROGOLD | Rail spur and intermodal facilities in Richland County, ND. The site is an integral part of a $267 million dollar corn processing plant. The project is related to the RRVW 1st subdivision north of Wahpeton ND and will have significant impacts on both the railroad and the local economy. Corn shipments into the plant will originate on the RRVW and trucks. Outbound value added products will originate on RRVW, and switch to BNSF for nationwide distribution. | $1,200,000.00 | $3,400,000.00 | $4,600,000.00 |
| **TOTAL** | | | **$2,906,204.31** | **$3,810,877.54** | **$6,717,081.85** |

# APPENDIX I:

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## Railroad Contacts

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# GLOSSARY

| | |
|---|---|
| **AAR** | Association of American Railroads. |
| **AADT** | Average Annual Daily Traffic. Number of vehicles, on average, that travel a road each day. |
| **ASLRRA** | American Short Line and Regional Railroad Association. |
| **At Grade Crossing** | Highway – rail crossing where both the railroad track and the highway are at ground level. Also known as grade crossing. Commonly referred to as crossing or rail crossing. |
| **Bill of Lading** | A document issued by a carrier to a shipper, listing and acknowledging receipt of goods and specifying terms of delivery. |
| **Branch line** | Secondary line, usually with less traffic density than the main line. |
| **Bridge Traffic** | Freight from one RR moved by a second RR for delivery to a third. For example, COFC received by RRVW forwarded by BNSF for delivery to CSX. Also know as Overhead Traffic. |
| **Carloads per Mile** | Measure of traffic density on a rail line. |
| **Class I Railroad** | RR with annual operating revenue of at least $250 million for three consecutive years. STB definition. |
| **Class II Railroad** | RR with annual operating revenue of at least $20 million but less than $250 million. STB definition. See Regional Railroad, Local Railroad and Short Line. |
| **Class III Railroad** | RR with annual operating revenue of less than $20 M million. STB definition. See Local Railroad and Short Line. |
| **COFC** | Container On Flat Car. Intermodal traffic consisting of shipping containers loaded on rail cars. See Intermodal. |
| **Consignee** | Entity to which a shipment will be delivered. |
| **Crossover** | Track connection between two adjacent tracks. |
| **Diamond** | Track configured in such a way that two railroad lines can cross at grade. |

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| **DOT** | US Department of Transportation |
| **Efficiency Train** | CPR term. A train composed usually of 100 cars that is loaded with a single commodity and runs between a loading and unloading facility. May or may not have dedicated power. May or may not have cars from more than one elevator (pooling). See Shuttle Train. |
| **FRIP** | Freight Rail Improvement Program. NDDOT rail assistance loan program that uses state funds. |
| **Foul the Main line** | Block or obstruct the main line to the extent that traffic cannot pass. |
| **Grade Separation** | In this context, a crossing where the tracks run above the highway (rail over) or under the highway (rail under). Commonly referred to as overpass or underpass. |
| **Gross Tons per Mile** | Measure of freight carried on a rail line. |
| **Interchange Point** | The point at which two or more railroads join. Traffic may be passed from one railroad to another at interchange points. |
| **Intermodal** | Rail cars carrying goods in a trailer or container that is moved by another mode of transport for part of its journey. See TOFC, COFC, Piggyback. |
| **ICC** | Interstate Commerce Commission. Federal agency that was assigned regulatory oversight of interstate commerce, including railroads. The agency was abolished in the ICC Termination Act of 1995. See STB. |
| **Local Railroad** | Generally, a Class III railroad that falls below the AAR Regional Railroad threshold. AAR definition. May also be called a short line. |
| **LRFA** | Local Rail Freight Assistance. Rail assistance program created by federal legislation. Also, NDDOT rail assistance loan program that uses federal funds. |
| **Main Line** | A track which extends through rail yards and from station to station that cannot be occupied without authorization or protection. |
| **Mile Post** | Indicates the distance from a specific location such as a major rail terminal or junction. May be expressed in tenths or hundredths, such as MP 10.1 or 10.12. |
| **NDDOT** | North Dakota Department of Transportation |
| **Overhead Traffic** | See Bridge traffic. |

**Piggyback** Early term for intermodal traffic consisting of truck trailers loaded on flat cars for rail transport. See TOFC.

**Pre-Empted Signals** Traffic signals that are overridden by rail crossing warning devices. The stoplights for the street approaching the rail crossing are turned red when the crossing warning devices are activated and stay red until the train clears the crossing.

**Quiet Zone** Designated area where train horns are not sounded. FRA approval is required before quiet zones may be established.

**Rail Weight** The number of pounds per yard that rail weighs. For example, 120lb. rail weighs 120 lbs. per yard. Generally, heavier rail supports higher speeds and heavier loads than lighter rail, but rail profile and quality of steel are factors as well.

**Rail Yard** A system of tracks, other than mainline, used for making up trains, parking or storing cars, fueling locomotives and other purposes.

**Regional Railroad** Railroad that operates at least 350 miles of track and/or earns $40 million in annual revenues. AAR definition. May also be called a short line.

**Short Line** Generic term for a railroad that does not meet STB Class I criteria. Generally, a Class II or III railroad by STB definition and/or a Regional or Local railroad by AAR definition.

**Shuttle Loader** Facility that can load shuttle trains or efficiency trains in compliance with railroad requirements.

**Shuttle Train** BNSF term. A train composed usually of 110 cars loaded with a single commodity that runs directly to and from a loading and unloading facility Usually has dedicated power. See Efficiency Train.

**Side Track** A track auxiliary to the main track.

**Siding** Track for meeting or passing trains. Railroad timetables indicate siding locations.

**Slow Order** Temporary speed reduction over a section of track on a specific track or line, such a Main Line, Branch Line or Siding.

**Smart Growth** Well planned, orderly development which strives to balance land use among competing interests. In the context of the rail plan, this would include inviting railroad input to the planning and zoning process.

**STB** Surface Transportation Board, created by the ICC Termination Act of 1995. The STB oversees rail abandonments and performs other functions that were once under the purview of the ICC. See ICC.

**Staggers Rail Act** Federal legislation that began deregulation of railroads. Some provisions:

- Limited rate regulation authority of the ICC (now STB) to service where competition is not effective to protect shippers.
- Legalized contracts between railroads and shippers.
- Allowed railroads to restructure their systems, including abandonment of redundant and light density lines.

**STCC** Standard Transportation Commodity Code. A seven digit numeric code representing 38 commodity groups. Code assignment is related to descriptions in freight classifications of rail and motor carriers. The STCC is maintained and published by AAR and is used in railroad waybill data.

**System Diagram Map** Map of railroad's system color coded to show five categories of line as follows. Used for non-exempt (full) abandonment only.

1. Red – anticipate filing abandonment within three years
2. Green – under study for potential future abandonment
3. Yellow – abandonment filed and pending before STB
4. Brown – lines being operated with financial assistance
5. Black or dark blue – all other lines owned and operated

**Tare Weight** Empty weight.

**Timetable** Authority for movement of regular trains subject to specified rules. Contains operating instructions and may list special conditions and rules.

**TOFC** Trailer On Flat Car. Intermodal traffic where truck trailers are loaded on rail cars. See Piggyback.

**Track Classification** Track classification is set by FRA based on prescribed requirements. FRA establishes maximum allowable operating speeds for freight and passenger trains by track class. Present track classes and speeds are shown below.

| TRACK CLASS | MAX SPEED – FREIGHT | MAX SPEED – PASS |
|---|---|---|
| Excepted | 10 MPH | NA |
| Class 1 | 10 MPH | 15 MPH |
| Class 2 | 25 MPH | 30 MPH |
| Class 3 | 40 MPH | 60 MPH |
| Class 4 | 60 MPH | 80 MPH |
| Class 5 | 80 MPH | 90 MPH |

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|---|---|
| **Unit Train** | Train loaded with one commodity, such as coal or grain, with a single destination, such as a power plant or port terminal. |
| **Waybill** | Legal document, based on bill of lading, that gives details and instructions relating to a shipment of goods and specifies a legal weight for billing purposes. |